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TRANSCRIPT OF RECORD.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1884.

No. ~~215~~. 19

JAMES EACHUS, APPELLANT,

vs.

JOSHUA B. BROOMALL.

APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE EASTERN DISTRICT OF PENNSYLVANIA.

FILED MAY 24, 1882.

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1 UNITED STATES OF AMERICA, *Eastern District of Pennsylvania,* } ss:

In the Circuit Court of the United States in and for the Eastern District of Pennsylvania, in the Third Circuit. April Sess., 1879.

JAMES EACHUS *vs.* JOSHUA B. BROOMALL. } No. 109.

Pleas and proceedings before the honorable the judges of the circuit court of the United States in and for the eastern district of Pennsylvania, in the third circuit, of April session, 1879. No. 109. In Equity.

It is thus contained:

Be it remembered that heretofor-, to wit, on the 15th day of July, A. D. 1879, came James Eachus, by his solicitors, George Tucker Bispham and Joseph C. Fraley, Esquires, and filed of record in our said court here his bill of complaint against Joshua B. Broomall, which said bill being read is in the words and tenor following, to wit:

2 In the Circuit Court of the United States, Eastern District of Pennsylvania. In Equity.

JAMES EACHUS *vs.* JOSHUA B. BROOMALL.

James Eachus, of the county of Chester and State of Pennsylvania, brings this his bill against Joshua B. Broomall, of said county and State, and *and* thereupon complains and says as follows:

I. Your orator is the true, original, and first inventor or discoverer of a new and useful invention, to wit: An Improvement in Processes of Cutting Wet Paper, which invention was not known to or used by others prior to your orator's discovery or invention of the same, and had never been, prior to your orator's application for letters patent therefor, in public use or on sale. In the year 1873 your orator made an application in writing to the Commissioner of

3 Patents of the United States for the granting of letters patent for said invention, and paid into the Treasury of the United States the fees required by law, and then and there also duly complied in all other respects with all the necessary conditions and requirements of the statutes of the United States in such case made and provided, prior to the granting of the letters patent hereinafter mentioned. Thereupon, on August 26th, 1873, letters patent of the United States, bearing date on that day, were issued to your orator according to law, whereby there was granted to him, his heirs, or assigns, for the term of seventeen years from August 26th, 1873, the full and exclusive right and liberty of making, constructing, using, and vending the invention aforesaid, a description whereof was given in the words of your orator in the schedule annexed to the said letters patent, and was made part of the same. The said letters

patent were issued in the name of the United States of America and were signed by the Secretary of the Interior, and were countersigned and sealed with the seal of the Patent Office by the Commissioner of Patents, and were numbered 142,154 and dated August 26th, 1873, and were issued and delivered to your orator. Thereupon, and after the issuing of the said letters patent, your orator put the said invention into use. Your orator prays that the said letters patent and the schedule annexed thereto as aforesaid may be deemed and taken as part of this bill, and to the originals of said letters patent or to a duly authenticated copy (which copy your orator offers, if required, to produce) your orator craves leave to refer.

II. Your orator further shows that heretofore and on or about May 9, 1874, your orator finding that the said letters patent No. 142,154, were inoperative by reason of a defective or insufficient specification, and the said error having arisen by inadvertency, accident, and mistake, and without any fraudulent and deceptive invention on the part of your orator, surrendered said letters patent to the Commissioner of Patents according to the provisions of the statutes of the United States in such cases made and provided, and having duly amended the said specification and having paid the fees prescribed by, and in all other things having complied with the statutes of the United States in such cases made and provided, new letters patent of the United States for the same invention were on the second day of March, 1875, issued and delivered to your orator, according to law, whereby there was granted to your orator, his heirs or assigns, for the then unexpired term of seventeen years from the 26th day of August, 1873, the full and exclusive right and liberty of making, constructing, using, and vending to others the said invention of an improvement in processes of cutting wet paper, a description whereof was given in the words of your orator in the schedule annexed to the said reissued letters patent. The said new letters patent were issued in the name of the United States and were signed by the acting Secretary of the Interior, and were countersigned and sealed with the seal of the Patent Office by the Commissioner of Patents, and were numbered 6315, and were issued and delivered to your orator. And thereupon and after the reissue of the said letters patent your orator put the said invention into use.

Your orator further prays that the said reissued letters patent and the schedule annexed thereto as aforesaid, may be deemed and taken as part of this bill; and to the original of said reissued letters patent and schedules, or a duly authenticated copy thereof, (which copy your orator offers hereby, if required to produce), your orator craves leave to refer.

III. Your orator further shows that the said invention so patented as aforesaid, unto your orator, is of great utility, and has been used by your orator to his great profit and advantage, and would have been used to the still greater profit and advantage of your orator but for the wrongful acts and doing of the defendant and of others acting in concert with him hereafter mentioned, and that the public

generally have acquiesced in the exclusive rights of your orator to the said invention as hereinbefore set forth.

IV. And your orator further shows that the defendant, Joshua B. Broomall, well knowing the premises and the rights and privileges secured unto your orator, and in order to deprive your orator of the profits, benefits, and advantages which might otherwise have accrued to him within the eastern district of Pennsylvania and elsewhere, and without the license or permission of your orator, has ever since on or about the month of May, A. D. 1879, unlawfully and
7 wrongfully used or caused to be used a process of cutting wet paper containing the inventions, improvements, and methods of your orator, the exclusive right of which is secured to your orator as hereinbefore set forth, and which said unlawful use by the defendant as aforesaid, is in violation and infringement of your orator's exclusive rights and privileges. And your orator further shows that this defendant has derived and recived, and is still deriving and receiving from such use, great gains, profits, and advantages, but to what amount your orator is ignorant and cannot set forth, but your orator prays that the defendant may be required to make full discovery of all such gains, profits, and advantages.

V. And your orator also avers that the defendant persists in said unlawful use, and does not pay to your orator such gains and profits as the defendant has actually made by means whereof your orator is and has been greatly injured, and is now prevented from putting such invention or discovery into successful operation, and is
8 deprived of and prevented from receiving the gains and profits to which he is lawfully entitled, from the exclusive rights and privileges so granted and secured to him as aforesaid, and which he would have derived and acquired and would now derive and acquire but for the wrongful acts of the said defendant.

VI. Wherefore your orator prays that the said defendant may be compelled by a decree of this honorable court to account for and pay over unto your orator all such gains and profits as have accrued, or arisen to, or been earned, or received by the said defendant, and all such gains and profits as your orator would have received but for the said wrongful acts and doings of the said defendant, and all damages your orator has sustained thereby; and that this honorable court will assess the same or caused them to be assessed under its direction, and will increase the same in its discretion as provided by law.

And that the said defendant, his associates, attorneys, solicitors, clerks, agents, servants, and workmen, and any party or par-
9 ties, for or on behalf of whom the said defendant is acting, may be perpetually enjoined and restrained by decree of this court from directly using, vending, or employing, in any manner whatsoever, any process of cutting wet paper, or any machine or implement whereby the same is effected, containing or embodying the said invention of your orator. Wherefore the said letters patent were issued as aforesaid, and from impinging upon or violating the said letters patent by the use or the sale of the said invention in any way whatsoever. And the said defendant may be decreed to pay the costs,

charges, and disbursements of this suit, and that your orator may have such other relief as the equity of the case may require and as to your honors may seem meet.

To this end, therefore, that the defendant may, if he can, show why your orator should not have the relief hereby prayed, and may full, true, direct, and perfect answer make, according to the best of his or his agents' or workmen's knowledge, remembrance, information, and belief, to the several matters hereinbefore averred and set forth as fully and particularly as if the same were here re-
10 peated paragraph by paragraph and he and they were thereto severally and specifically interrogated, may it please your honors to grant to your orator a writ of subpœna *ad respondendum*, issuing out of and under the seal of this honorable court, directed to the said defendant, commanding him to be and appear and make answer unto this bill of complaint, and to perform and abide by such order and decree herein as to this court may seem required by the principles of equity and good conscience.

May it also please your honors to grant to your orator a provisional or preliminary injunction issuing out of and under the seal of his honorable court enjoining and restraining the defendant and his attorneys, solicitors, clerks, servants, workmen, and agents, or any party or parties for whom the said defendant is acting, and each of them to the same tenor, purport, and effect hereinbefore prayed for in regard to said perpetual injunction.

And your orator will ever pray.

GEO. TUCKER BISPHAM,
For Complainant.

11 James Eachus, being duly affirmed according to law, says: That the facts set forth in the foregoing bill, so far as they are stated on his own knowledge, are true, and so far as the same are stated on information he believes them to be true.

JAMES EACHUS.

Affirmed and subscribed before me, this twelfth day of July, A. D. 1879.

[L. S.] FRANCIS A. LEWIS, JR.,
Notary Public.

(Endorsed:) In the circuit court of the United States, eastern district of Penna. No. 109. April session., 1879. James Eachus *vs.* Joshua B. Broomall. In equity. Bill of complaint. Issue subpœna in equity, returnable on the first Monday of August, 1879. Geo. Tucker Bispham. July 15, 1879. Geo. Tucker Bispham, for complainant. Filed July 15, 1879.

12 And afterwards, to wit, on the 2d day of September, A. D. 1879, the defendant, by his solicitor, Charles H. Pennypacker, Esquire, comes into our said court here and files his answer to the aforesaid bill of complaint, which being read is as follows, to wit:

The Answer of the Above-named Defendant to the Plaintiff's Bill.

In the Circuit Court of the United States for the Eastern District of Pennsylvania.

JAMES EACHUS
vs.
JOSHUA B. BROOMALL. } 109. In equity. C. C. of the United States, April term, 1879.

The defendant reserving to himself all benefit of any exception he may be entitled to take to the said bill of plaintiffs, whether for form or substance, in answer nevertheless thereto or to so much thereof as he is advised it is material for him to answer unto, says:

1. That the allegations contained in the first section of the first paragraph of the plaintiff's bill, — because the defendant avers
13 that said plaintiff was not the inventor or discoverer of said process. As to the other matters contained in said first paragraph, the defendant having no knowledge or information, neither admits nor denies,

2. That in answer to the allegations contained in the second paragraph of the plaintiff's bill the defendant avers that such reissue was improper and confers no additional or extended rights upon said plaintiff, inasmuch as the original claim, or the second claim, was not patentable.

3. That the allegation in the third paragraph of plaintiff's bill, "that the public generally have acquiesced in the exclusive rights of the plaintiff to the said invention," is erroneous and not true.

4. The defendant denies all the allegations contained in the fourth and fifth paragraphs of plaintiff's bill, and avers that he has never at any time infringed upon plaintiff's rights and privileges in any manner, nor has he unlawfully used any invention or process owned, or supposed to be owned, by the plaintiff for the cutting of wet paper or boards.

5. The defendant submits to the court, and insists that all
14 and every the matter and matters in said complainrnt's bill mentioned and complained of, may be tried and determined, and a full and adequate remedy afforded at law; and in respect to which the plaintiff is not entitled to any relief from a court of equity, and the defendant prays to be allowed the same privilege of this defence as if the defendant had pleaded or demurred to the plaintiff's bill. And the defendant denies that there is any other matter in the plaintiff's bill material to make answer to, and not hereby answered, confessed, or denied, all of which the defendant is ready to aver and prove, and prays to be hence dismissed with reasonable costs and charges, &c.

CHAS. H. PENNYPACKER,
Solicitor for Defendant.

15 CHESTER COUNTY, *ss:*

Joshua B. Broomall, the above-named defendant, being affirmed according to law, says: That the statements set forth in the foregoing answer are true, as he verily believes.

JOSHUA B. BROOMALL.

Affirmed and subscribed before me, this 2d day of Sept., 1879.
WM. WHITEHEAD, *J. P.*

(Endorsed:) 109 to April term, 1879. James Eachus *vs.* Joshua B. Broomall. In equity. Defendant's answer. Filed September 2, 1879.

16 And afterwards, to wit, this 2nd day of September, A. D. 1879, the complainant, by his counsel, comes into our said court here and files his replication; which, being read, is as follows, to wit:

The Replication of James Eachus, Complainant, to the Answer of Joshua B. Broomall, Defendant.

United States Circuit Court, Eastern District of Pennsylvania.

JAMES EACHUS
vs.
JOSHUA B. BROOMALL. } In Equity.

This repliant, saving and reserving unto himself, now and at all times hereafter, all and all manner of benefit and advantage of exception which may be had or taken to the manifold insufficiencies of the said answer, for replication thereunto, says: That he will aver, maintain, and prove his said bill of complaint to be true, certain, and sufficient at law to be answered unto, and that the said answer of the said defendant is uncertain, untrue, and insufficient to be replied unto by this repliant.

17 Without this, that any other matter or thing whatsoever in the said answer contained, material or effectual in the law to be replied unto, and not herein and hereby well and sufficiently replied to, confessed or avoided, traversed or denied, is true. All which matters and things this repliant is and will be ready to aver, maintain, and prove, as this honorable court shall direct, and humbly prays as in and by his said bill he has already prayed.

BISPHAM,
Per J. C. F.,
Complainant's Solicitor.

(Endorsed:) U. S. circuit court, E. dist. of Pa., in equity. No. 109. April sess., 1879. Eachus *vs.* Broomall. Replication. Filed September 2, 1879. Bispham.

18 And afterwards, to wit, on the day and year last aforesaid, the complainant, by his counsel, comes into our said court here and moves the court for the appointment of an examiner. Whereupon the court made the following order, to wit:

U. S. Circuit Court, E. Dist. of Pa. In Equity.

EACHUS *vs.* BROOMALL.

And now, to wit, this second day of September, 1879, on motion

of Bispham, for complainant, the court appoints George M. Rupert, Esq., of West Chester, examiner to take evidence in above cause.

(Endorsed:) U. S. circuit court, E. dist. of Pa., in equity. No. 109. April sess., 1879. Eachus *vs.* Broomall. Order for appointment of examiner. Entered September 2, 1879. Bispham.

19 And afterwards, to wit, on the 25th day of October, A. D. 1881, this cause coming on for a hearing on pleadings and proofs before the Honorable William McKuman, circuit judge, and having been argued by counsel for the respective parties, and having been duly considered by the court, the following order is entered, to wit:

Circuit Court of the United States, Eastern District of Pennsylvania. In Equity.

JAMES EACHUS
vs.
JOSHUA B. BROOMALL. } No. 109 to April sessions, 1879.

And now, to wit, October 25, 1881, the above cause came on to be heard upon proofs and exhibits in support of bill and answer, and upon hearing the complainant's bill is dismissed, and the injunction dissolved without costs to the defendant.

(Endorsed:) No. 109, April sess., 1879. C. C. U. S., E. D. of Pa. Eachus *vs.* Broomall. Decree dismissing bill, &c., entered and filed October 25, 1881.

20 And afterwards, to wit, on the 4th day of November, A. D. 1881, the complainant, by his counsel, Joseph C. Fraley, Esq., appears in open court, prays an appeal from the decree of our said court to the Supreme Court of the United States, which said appeal, being allowed, is in the words following, to wit:

U. S. Circuit Court, Eastern Dist. of Pa.

EACHUS
vs.
BROOMALL. } April Sess., 1879. No. 109.

And now, to wit, this fourth day of November, 1881, Joseph C. Fraley, Esq., of counsel for complainant, appearing in open court, prays an appeal to the Supreme Court of the United States from the decree of this honorable court entered October 25th, 1881, dismissing the bill of complaint, which appeal is allowed, with security in the sum of five hundred dollars ($500).

21 (Endorsed:) U. S. circuit court, eastern dist. of Pa. In equity. Eachus *vs.* Broomall. April sess., 1879. No. 109. Order allowing appeal to Supreme Court of the U. S. entered and filed November 4, 1881.

22 And afterwards, to wit, on the 22nd day of November, A. D. 1881, the complainant by his counsel appears in open

court here, and presents his bond *sur* appeal, which said bond, being approved, is in the words following, to wit:

Circuit Court of the United States, Eastern District of Pennsylvania. In Equity.

JAMES EACHUS
vs.
JOSHUA B. BROOMALL. } Ap'l Sess., 1879. No. 109.

Know all men by these presents, that we, James Eachus, William Eachus, and Samuel Greenwood, all of the county of Chester, in said district, are held and firmly bound unto the above-named Joshua B. Broomall in the sum of five hundred dollars, to be paid to the said Joshua B. Broomall, his executors or assigns; to which payment, well and truly to be made, we bind ourselves, our executors and administrators, jointly and severally, firmly by these presents.

Sealed with our seals and dated this twenty-second day of
23 November, in the year one thousand eight hundred and eighty-one.

Whereas, lately at a circuit court of the United States in and for the district aforesaid, in the third circuit, in a suit depending in said court between the said James Eachus, complainant, and the said Joshua B. Broomall, respondent, a final decree was rendered against the said James Eachus, and the said James Eachus having taken an appeal, said appeal has been allowed by the said circuit court to the Supreme Court of the United States to reverse the said decree in the aforesaid suit:

Now, the condition of this obligation is such that if the said James Eachus shall prosecute his said appeal to effect and answer all damages and costs occasioned to the said Joshua B. Brownall; if *it* fails to make *its* appeal good, then this obligation to be null and void; otherwise, to remain in full force and virtue.

JAMES EACHUS. [L. S.]
WILLIAM EACHUS. [L. S.]
SAMUEL GREENWOOD. [L. S.]

Sealed and delivered in the presence of—
SAMUEL BELL.
WM. A. WILLIAMSON.

23½ Approved:
By the court:
Nov'r 22, 1881. SAMUEL BELL, *Clerk, &c.*

(Endorsed:) No. 109, April sess., 1879, C. C. U. S., E. D. of Pa. Eachus *vs.* Broomall. Bond *sur* appeal. Filed November 22, 1881.

24 UNITED STATES OF AMERICA, *ss:*

To Joshua B. Broomall, Greeting:

You are hereby cited and admonished to be and appear at a Supreme Court of the United States, to be holden at Washington on

the second Monday of October next, pursuant to an appeal filed in the clerk's office of the circuit court of the United States for the eastern district of Pennsylvania, in the third circuit, wherein James Eachus is appellant and you are appellee, to show cause, if any there be, why the decree rendered against said appellant, as in said appeal mentioned, shall not be corrected, and why speedy justice should not be done to the parties in that behalf.

Witness my hand, this 22nd day of November, in the year of our Lord one thousand eight hundred and eighty-one.

WM. BUTLER, *Judge.*

24½ Service accepted.

CHAS. H. PENNYPACKER,

12 | 16, '81. *Att'y for Joshua B. Broomall.*

25 In the Circuit Court of the United States in and for the Eastern District of Pennsylvania, in the Third Circuit.

EACHUS *vs.* BROOMALL. } No. 109. April sess., 1879. In Equity.

To the honorable the judges of said court:

The subscriber, appointed examiner to take evidence in the above cause, respectfully reports: That he sat for the purpose of his appointment, at his office, in the borough of West Chester, on the 22nd day of November and the 20th day of December, A. D. 1879, and the 12th day of June and the 3rd day of August, A. D. 1880.

The complainant was represented before him by George Tucker Bispham and Joseph C. Fraley, Esquires, and the respondent by Charles H. Pennypacker, Esquire.

Various witnesses were called, who were severally duly examined under oath or affirmation, their testimony reduced to writing,
26 and the same is hereto annexed and herewith returned to the said court.

(Signed) GEO. W. RUPERT, *Examiner.*

October 23rd, 1880.

27 In the Circuit Court of the United States for the Eastern District of Pennsylvania, in the Third Circuit.

EACHUS *vs.* BROOMALL. } No. 109. April sess., 1879. In Equity.

George Tucker Bispham, Esq., for complainant; C. H. Pennypacker, Esq., for respondent.

First Meeting.

Nov. 22, 1879.

Present: Mr. Bispham and the plaintiff in person with witnesses, and the defendant in person.

The defendant's counsel, Mr. Pennypacker, being absent, an ad-

journment was had until half past one o'clock p. m. At 1½ o'clock Mr. Bispham and the plaintiff with his witnesses again appeared, and were ready to proceed with the case. After a little delay the defendant came in and stated that his attorney was out of town, and had failed to make any arrangement to supply his place He therefore asked an adjournment, saying the investigation could
28 not proceed without embarrassment and disadvantage to him.

Mr. Bispham, though anxious to proceed, stated that he recognized the force of the defendant's objection, appeciated his dilemna, and would not interpose any further objection to an adjournment.

Adjourned to Dec'r 20, 1879, at 10 a. m.

Second Meeting.

DECEMBER 20*th*, 1879. 12 *o'clock m.*

Present: Joseph C. Fraley, Esq., for plaintiff, and C. H. Pennypacker, Esq., for defendant.

Mr. Fraley offers in evidence the letters patent No. 6,315, reissue, dated March 2nd, 1875, granted to James Eachus, and the same is marked Complainant's Exhibit A.

(It is agreed between counsel that a certified copy of the letters patent may be hereafter substituted.)

It is hereby agreed by the counsel of the parties that the machine shown, marked B, has been used in the paper mill situated in East Fallowfield township, Chester county, where the defendant is
29 employed by his son, George Broomal, the lessee of the mill, to look after and superintend the business, buy stock, and sell goods as his agent and by his authority. That the exhibit marked B is revolved by suitable machinery for the purpose of cutting and trimming paper board in a moist or wet condition, as the same comes from the paper-making machine. That it had been so used in said mill before the filing of the complainant's bill in this suit, and subsequent to the date of the reissued patent above mentioned.

It also agreed that complainant's counsel may offer in evidence the cutter used by the complainant, which by mistake has not been brought before the examiner to-day.

Complainant rests.

Mr. PENNYPACKER calls JAMES EACHUS, aff'd:

1 Q. Are these letters patent the first that you have ever procured upon this machine or process?

30 A. I procured the letters patent on the machine first; this is a reissue.

2 Q. Where are those letters patent?

A. I surrendered them to the Government.

3 Q. At the time those letters patent were issued upon the machine, were you operating a paper mill?

A. Yes, sir; a board mill.

4 Q. Where?

A. One mile north of Coatesville, in Chester county.
5 Q. Was Mr. Berstler in your employment?
A. I think not; I know he was not.
6 Q. Was he ever in your employ?
A. Yes.
(Signed) J. EACHUS.

Affirmed and subscribed before me, Dec'r 20, 1879.
(Signed) GEO. M. RUPERT, *Examiner.*

EMMOR B. COPE, affirmed:
1 Q. Where do you reside?
A. About 2½ miles west of West Chester.
2 Q. What is your occupation?
A. A machinist.
3 Q. How long and where have you been in that business?
A. About 35 years at that place.
31 4 Q. Have you been in the habit of constructing machinery for paper board mills?
A. Yes, sir; during almost the whole of that time.
5 Q. Were you ever called upon by Mr. Eachus in relation to a machine for cutting paper; and, if so, when?

(Objected to, as irrelevant.)

A. Yes, I was; probably about ten years ago; a long time ago; may be longer.
6 Q. What did he state to you on that occasion?

(Also objected to, as irrelevant.)

A. I don't pretend to give what he said at that time; only the substance of it. The substance was that he had invented a cutting machine, a sawing machine for trimming and cutting paper boards, and wished to have one built. He also said he wished to obtain a patent on it.
7 Q. Did you build one for him?

(Same objection.)

A. I built parts of a machine, not all.
8 Q. What part of the machine did you build?

(Same obj.)

A. We built shafts, collars, pulleys, and bearings; that is, as far as I remember.
32 9 Q. Did you apply for a patent for him at that time?

(Same obj.)

A. I wrote a specification and made drawings for him, and understood that he made an application for a patent.
10 Q. What became of that application?

(Same obj., and also objected as incompetent.)

A. The application was rejected, and I afterwards took up the matter myself.

11 Q. What did you do then?

(Same obj.)

A. I succeeded in getting a patent, as attorney for Mr. Eachus.

12 Q. Did you not manufacture this machine that has been used in Mr. Broomall's mill?

A. I made parts of that machine; everything except the cutters. Those I ordered of Henry Disston & Sons.

13 Q. When did you first build this machine that has been used in Mr. Broomall's mill?

A. About one year ago; but it was not put in operation at that time.

14 Q. For what purpose was this machine to be used in George Broomall's mill?

33 (Obj. to as irrelevant.)

A. For the purpose of trimming and cutting wet paper boards.

15 Q. Have you seen the machine in operation at Eachus' mill?

A. Yes, frequently.

16 Q. The same machine that he claims to have invented for cutting paper board in a wet state?

(Obj. to, as incompetent.)

A. The same machine precisely, so far as I could discover.

17 Q. Does the machine in Broomall's mill, made by you, differ from the machine in Eachus' mill?

A. There are a great many points of difference; they are as follows: The cutters are entirely different in shape, one being a circular saw, and the other cutting more as a knife; there is no resemblance whatever in the shape of the two. The table moves differently on the frame which carries the wet boards; that is about the principal difference.

18 Q. Does the Eachus machine saw the boards or cut them?

A. It saws the boards; cutting out a kerf just the same as
34 a circular saw would saw wood.

19 Q. Does it leave a straight edge or a broken edge?

A. It leaves a straight edge, but rather rough.

20 Q. How does the machine used in Broomall's mill operate?

A. Just like the blade of a knife, or a series of blades, leaving a very smooth edge as well as straight. It is a cutting or shearing operation altogether.

21 Q. (Exhibit A shown the witness.) Are these the letters patent obtained by you?

(Objected to, as irrelevant.)

A. This is not the same that I took out for him; parts are the same, but it has been changed and amended in various ways.

22 Q. How many mills in this county are engaged in the manufacture of paper boards?

A. I should say not more than ten.

23 Q. What has been the usual way in those mills of cutting and trimming their boards?

A. Generally not trimmed at all. Sometimes boards were
35 cut in two in order to make smaller seizes, but I can't answer as to how that was done; I have seen hand saws sharpened up to an edge used.

24 Q. Does this machine used by Broomall in any way infringe on the machine used by Eachus?

(Obj. to, as incompetent.)

A. In my judgment, it does not.

25 Q. Have you had much experience in procuring patents for machines?

A. Yes, sir.; I have taken out quite a number of patents.

26 Q. Have you made examination in the Patent Office of machinery used in paper-board mills?

A. Yes, sir; I made two very thorough examinations in the department of paper cutting machinery.

27 Q. Do you base your judgment that the Broomall machine is no infringement on the Eachus machine upon the knowledge and experience thus acquired?

A. Partly on that and on information received from the office; that all this machinery had been patented for other purposes and the patents had expired.

36 (Mr. Fraley says so much of the above answer as relates to information obtained from the office is objected to as hearsay.)

X Ex.:

28 Q. The carriage of the Broomall machine runs at right angles to the plane of revolution of the saw, does it not?

A. It moves parallel to the plane of rotation.

29 Q. Is there more than one carriage?

A. No, sir.

30 Q. Have you ever examined the action of a saw upon dry paper board?

A. No, sir; never saw it.

31 Q. Have you ever seen the Broomall machine in operation?

A. Yes, sir; once.

32 Q. As the cutter revolved the edges struck the moist or wet board in succession, did they not?

A. Not by stroke, but gradually, more like a knife; commencing at the heel and cutting to the point as the machine table feeds up. It would not amount to a stroke when the heel of the next blade was reached.

37 33 Q. When you say "more like a knife," do you refer to the fact that the edge of each blade, as you call them, is a curved one, so that the action in cutting is gradual?

A. Yes, sir.

34 Q. Have you ever compared by practical experiment the process of cutting paper boards in a wet condition with the process of cutting it in a dry condition?

A. No, sir; but I know all about cutting heavy paper coming from the machine in a dry condition.

35 Q. How is it generally cut?

A. It is cut in one direction by rolling shears, in the other direction by straight shears, acting like ordinary scissors.

36 Q. Describe what you call rolling shears.

A. Rolling shears are the same in their operation as straight shears, except that their edges are circular and they revolve on shafts, two cutters being operated together.

37 Q. In other words, they are discs of metal with sharp edges, are they not?

A. Their edges are not sharp; they are made at an angle
38 of about sixty degrees, which is about the same angle as a pair of scissors.

38 Q. And the edges are smooth, without any undulation or serration, are they not?

A. The edges are smooth and not undulated or serrated.

39 Q. Have you ever ascertained by actual experiment the effect which a pair of round shears would have in cutting paper board in the condition in which it is when cut by the defendant's cutter?

A. No; I have never had any experience, and never saw it cut. I have an opinion about it only.

40 Q. Does not the defendant's cutter when operated upon the wet board make a kerf?

A. Not when I have seen it — operation.

41 Q. Does it not push pieces of the wet board out into the groove in which it runs?

A. It may do that. I did not notice whether it did or not. It certainly threw none outside.

42 Q. About how fast does it run—how many revolutions a minute?

39 A. I judge it was running about 400 revolutions a minute.

43 Q. Does not the only practical difference in operation between the defendant's and complainant's machine consist in the fact that the cutter of the former presents a series of curved edges and the latter a series of straight edges to the wet paper board?

A. No; that is not the difference. The difference between the two is, one presents a series of edges and the other a series of points—just the difference between a saw and a knife.

44 Q. Don't you rather mean the difference between a saw and a series of knives?

A. Yes, sir; that is my idea exactly.

45 Q. Now how sharp must an edge be, in your opinion, to justify calling it "a knife"?

A. There are different kinds of knives for cutting different kinds of material. Paper boards do not require a sharp edge—wet paper boards, I intended to say. The condition of the boards is such that you can pass your finger through them at that time.

40 46 Q. In other words, you mean, don't you, that when you are cutting this moist paper board an edge which is as wide and dull as the sides of an ordinary saw-tooth will cut that just as well as a sharp dinner-knife will cut meat?

A. There is no doubt about it cutting it as well.

47 Q. Is there any "set" to the teeth in the cutter in Mr. Eachus' machine?

A. I can't say there is no "set," but there is none necessary.

48 Q. How thick does what is called paper board run?

A. From one-sixteenth of an inch to three-eighths of an inch.

49 Q. In the Eachus machine the teeth go clear through, don't they?

A. Yes, clear through the boards; but the shaft is above the pile of boards, not under it, like a circular saw.

50 Q. About how many inches in thickness of paper boards are usually piled together for cutting?

A. That would depend more on the distance between the flange and outside of the cutter than anything else; I should judge three or four inches.

41 Re-ex.:

51 Q. What is the character of the waste from the Eachus machine?

A. Small pieces or stringy pieces, much like a saw would throw out from wood in ripping.

52 Q. What is the character of the waste from the Broomall machine?

A. I did not notice any waste at all; it was a clean cut, so far as I observed; it left a very even, smooth edge.

53 Q. What do you understand by "a knife"?

A. Well, I should say it was an instrument used to separate material without tearing out any part of it.

X Ex.:

54 Q. Do you mean to give it as your opinion that nothing but the point of the tooth in the Eachus machine does any cutting when the cutter is used upon, say, two inches of thickness of wet boards?

A. That is a plain mathematical question, depending upon the number of teeth and the number of revolutions of the saw; I could tell you exactly if I knew the revolutions of the saw, the
42 number of teeth, and the advance of the table; I judge, however, that not more than one-sixteenth of an inch of the point would come in contact with the material.

55 Q. Look at Plaintiff's Exhibit A, and state whether you find that the saw or cutter therein specified is required to have any special shape of teeth?

A. Yes, sir; it must be a saw; there is no particular angle for the teeth of a saw; different saws for different kinds of material require different angles; it would only be a saw when it operates as a saw in cutting out a kerf.

56 Q. Would either of these cutters be practically useful for cutting dry paper boards?

A. Yes, sir; I think the plaintiff's machine would cut dry boards by using saws at the same angle, but with the teeth "set," as used in sawing wood; the other machine I don't think would cut dry boards at all.

57 Q. What kind of a line would you call the edge of the defendant's cutter?

43 A. I would call it a series of curved lines.

58 Q. From your experience of the use of these machines, are you able to say why the defendant's cutter is not made in form of a simple disc without any undulation to the line of the edge?

A. I am not able to say; the- use the circular knife for cutting everything.

59 Q. Would that be cheaper or more expensive than to make a cutter in the form of defendant's machine?

A. It would cost about the same; I might add to my answer to the previous question that I would use an eccentric round knife or oval knife.

60 Q. In other words, what you want in cutting wet paper boards is a cutter which has some variation in the outlines of its edge, so that it makes a series of successive cuts?

A. Yes; that is the idea; it will do better than a continuous round edge.

44 Re-ex.:

61 Q. Does or does not the Broomall knife make a series of cuts or a continuous cut; in other words, is it constantly cutting?

A. It can be fed up so that it will be constantly cutting. It depends upon the speed of feeding entirely.

62 Q. Well, then, this process is the combined action of the table as a feeder and the knife as a cutter?

A. It does depend upon the continued action of these parts.

X Ex.:

63 Q. But this process, in your opinion, would not be a practically useful one unless it were used upon the board in a moist or wet condition; am I correct?

A. Yes; it would not cut anything that was not moist or wet.

(Signed) EMMOR B. COPE.

Affirmed and subscribed before me, Dec'r 20, 1879.

(Signed) GEO. M. RUPERT, *Examiner.*

45 DAVID Y. WILSON, affirmed:

1 Q. Where do you reside?

A. In Highland township, Chester county.

2 Q. What is your occupation?

A. A farmer now; formerly paper-maker.

3 Q. When did you commence the business of paper-making, and where?

A. In the year 1854, in Lancaster county.

4 Q. How long did you continue in that business?

A. Eight years.

5 Q. Did you during that time manufacture paper boards?

A. I did altogether.

6 Q. How did you cut, trim, or separate the paper boards?

(Objected to, as irrelevant.)

A. With a hand-saw; sometimes with the teeth on and sometimes ground the teeth off, and ground the saw with a curved line. Then I sharpened it up to a sharp edge.

7 Q. Were the boards at the time you thus cut and trimmed them in a wet state?

Same obj.

A. They were.

8 Q. How far was your mill located from that of Mr. Eachus?

46 A. When I was in Lancaster county I suppose the distance was from 12 to 15 miles. In Chester county I suppose the distance was about 8 miles.

9 Q. Was this your common method of cutting and trimming your paper boards?

(Same obj.)

A. I always trimmed and cut them that way; have frequently trimmed them all round.

10 Q. Did any of your workmen leave your employ and go to that of Mr. Eachus?

(Same obj.)

A. No, sir; never any of mine.

11 Q. Do you know whether the same method for cutting and trimming paper boards that you used from 1854 to 1862 was in use at that time in other paper-board mills?

(Same objection.)

A. It was in all the mills that I was acquainted in.

12 Q. What mills do you now remember practised this method of cutting paper boards in a wet state?

(Same objection.)

47 A. Thomas Young's, on Buck Run, below Mr. Broomall's; Vance's mill, now Palmer's; Daniel Baker's mill, that is now J. Wilson's mill; Newlin's mill; that is on Buck Run, too; D. S. Young's two mills, on Buck Run; and Seucnich's mill, in West Caln township.

13 Q. How far was the furthest of these mills from Mr. Eachus' mill, and how near was the nearest?

(Same obj.)

A. The furthest is, I suppose, Vance's mill, about nine miles; the nighest, Newlin's, I suppose, about five or six miles.

14 Q. W-ere were these paper boards sold that were manufactured by all these mills?

Same obj.

A. Sent to Philadelphia and New York.

WITNESS says: I wish to make one correction as to the number of

years I had a paper mill. I was in business from 1854 to 1856; then I was out of business one year, and in business again from 1857 to 1863.

No cross-examination.
(Signed) D. Y. WILSON.

Affirmed and subscribed before me, Dec'r 20, 1879.
(Signed) GEO. M. RUPERT, *Examiner.*

48 JABEZ WILSON, affirmed:

1 Q. Where do you reside and your occupation?
A. In W. Marlborough township, Chester county; am a paper-maker; have been in the business 16 years, in West Marlborough township.
2 Q. Have you manufactured paper boards?
A. Yes, sir; ever since I have been in the paper business.
3 Q. How far is your mill from that of Mr. Eachus?
A. I suppose from 6 to 8 miles.
4 Q. In what way do you cut, trim, or separate paper boards?
A. Sometimes we use a roller of the right size with grooves in; at other times we have to cut them with a hand saw.
5 Q. How long have you been in the habit of cutting them with a hand saw?
A. Ever since I have been in the business.
6 Q. Were the boards in a wet state when cut?

(Objected to, as irrelevant).

A. Yes, sir; right wet from the machine.

49 No cross-examination.
(Signed) J. WILSON.

Affirmed and subscribed before me, Dec'r 20, 1879.
(Signed) GEO. M. RUPERT, *Examiner.*

JOHN A. BERSTLER, aff'd.

1 Q. Where do you reside?
A. Ercildome, Chester county, Penn'a.
2 Q. What is your occupation, and how long?
A. Paper-maker; have followed that about 18 or 20 years.
3 Q. Were you at any time in the employment of Mr. Eachus, the plaintiff; and, if so, when?
A. Yes, sir; in 1878 and 1879.
4 Q. When you first went to work for him what apparatus did he use for cutting wet paper boards?

(Objected to, as irrelevant.)

A. A saw, a circular saw; I don't know how long he had been using it.
5 Q. Was this process patented at that time?

(Objected to, as irrelevant.)

A. Not at that time.

50 6 Q. Did you work for Mr. Eachus before 1878?

A. I believe I did one summer; I forget what summer it was; I don't know whether it was 1876 or 1877; it was one or the other.

7 Q. After you were working for Mr. Eachus did you invent any process for cutting paper boards in a wet State?

(Objected to, as irrelevant.)

A. Yes, a knife; a circular knife.

8 Q. (Model of knife shown.) Is that the knife?

(Same objection.)

A. Yes, sir.

9 Q. After you invented that, was it used in Eachus's mill?

(Objected to, as before.)

A. No, sir.

10 Q. In whose mill was it first used?

(Same objection.)

A. Mr. Broomall's.

11 Q. Did you get letters patent on this invention?

Same objection.

A. Yes, sir. These are my letters patent, No. 223,103, dated Dec'r 30th, 1879.

12 Q. Had you previously transferred any right to Mr. Broomall to use this process?

(Same obj.)

51 A. Yes, sir.

13 Q. Why is wet paper very difficult to cut as stated in your specification for patent?

A. Because it is soft and spungy in a wet state.

14 Q. Your cutter like Exhibit B is intended to be used, is it not, for cutting paper board while in a moist or wet condition?

A. Yes, sir.

15 Q. Do you know what "rolling shears" are, or in other words, "rotary cutters" are; I mean cutters which have a smooth circular edge all round?

A. Yes; they are used for cutting dry paper.

16 Q. Did you ever use or see used such a cutter upon wet paper board?

A. No, sir.

17 Q. From your knowledge of the subject do you think it would cut wet paper board?

A. Yes, sir.

18 Q. If that is the case why do you go to the trouble of putting all the indentations in this cutter, Exhibit B?

52 A. So as to make no waste behind it.

19 Q. Would there be any waste behind it if you used a plain rotary cutter without any indentations?

A. No, sir.

20 Q. Then please explain whether your cutter is better than a plain one?

A. A plain cutter won't work on paper in a wet state.

21 Q. Then your previous answer was a mistake, was it not, when you said that a plain rotary cutter would cut wet paper board satisfactorily?

A. It was a mistake.

22 Q. Can you tell why a plain cutter will not work satisfactorily in wet paper board?

A. Because it will go a little piece and then choke up and stop and run up on top.

23 Q. In order to cut wet paper board satisfactorily, you have got to use something which will give a series, one after the other, and each one a little ahead of the other, have you not, as shown in the lines in your drawing?

A. Yes, sir.

24 Q. Can you tell why this is so?

53 A. Well, I can't just exactly tell why; each blade just cuts so far at a time.

25 Q. Did you have one of these cutters like Exhibit B before you left Mr. Eachus's mill?

A. Yes, sir.

26 Q. Did you use it there?

A. No, sir.

27 Q. You were discharged by Mr. Eachus, were you not?

A. Well, he didn't just discharge me, but I had to go away; I understood from others that a new set of hands were coming on, I thought it was time to leave.

28 Q. Into whose mill did you go upon leaving Mr. Eachus's?

A. I went to Mr. Broomall's.

29 Q. And how long was it before you had one of these cutters going there?

A. I reckon it was four or five months; I wasn't there when the cutter was actually started.

30 Q. You told Mr. Broomall about it, did you not, very soon after you got there?

A. Yes, sir.

54 31 Q. Do you know when one of your cutters was first used at Mr. Broomall's?

A. In May, 1879, I think.

32 Q. When you were working at Mr. Eachus's mill, didn't the teeth of the cutters very soon get their sharp points worn off so that the edge of the tooth was flat or slightly rounded?

A. It would soon get flat; in the course of a year or two.

33 Q. And when this went on the teeth would entirely disappear, would they not, unless you took the cutter and had it "gummed out;" that is, you had new serrations cut in its edge?

A. Yes, sir.

Re-ex.:

34 Q. After the teeth of the Eachus saw are worn, does it cut as well as before?

A. No, sir.

35 Q. Is there any difference in the operation of the machine you invented and the Eachus machine on wet paper?

A. Yes, sir.

36 Q. Describe the difference in the operation of the two machines in cutting wet paper board.

A. The saw makes waste behind; throws the paper all back and front over; it makes a kerf, a waste, and the knife makes no waste at all; it makes no kerf; it merely separates the paper; makes no kerf at all.

37 Q. Then do I understand you to say that this machine of yours makes a clean cut?

(Objected to, as leading.)

A. It makes a clean, smooth edge.

X Ex.:

38 Q. Have you ever tried using your cutter upon what is called "long fibre board"?

A. Yes, sir.

39 Q. Are you willing to testify that it doesn't raise any edge or thicken the edge of such board in cutting it?

A. Not as much as a saw; it does a trifle; you see nothing of it after it is finished.

40 Q. Don't you call that making a kerf?

A. No, sir.

41 Q. Did you ever use your cutter on "short fibre board"?

A. Yes, sir.

42 Q. Are you willing to testify positively that it never threw out any waste in that kind of board?

A. Yes, sir.

43 Q. You are as sure of that, are you, as of the truth of everything else you have said?

A. Yes, sir.

44 Q. How fast do you run your cutter?

A. Five hundred revolutions a minute; the faster the better.

45 Q. Mr. Eachus used to run his as high as a thousand, did he not?

A. I never knew how fast he ran his.

46 Q. The waste from Mr. Eachus' cutter can be thrown right into the mixing engine, can it not?

A. Yes, sir.

47 Q. You say you couldn't see the thickening of the edges on long-fibre board after it is finished; isn't that equally so of board cut by Mr. Eachus' cutter after it is finished?

A. Well, his is more so than this; I don't know that there is much difference between them after it is finished.

(Signed) JOHN A. BERSTLER.

Affirmed & subscribed before me, June 12th, 1880.
(Signed) GEORGE M. RUPERT. *Examiner.*

57 LEE F. WELSH aff'd:

1 Q. Where do you reside, and what is your occupation?
A. I reside at Wilmington, Delaware; am a mill wright.
2 Q. Were you ever in the employment of Mr. Eachus; and, if so, when?
A. Yes, sir; about nine years ago, I think.
3 Q. Did you assist him to build the first machine in question?

(Objected to, as irrelevant.)

A. Yes, sir.
4 Q. Mr. Eachus was then manufacturing paper boards?

(Same objection.)

A. Yes, sir.
5 Q. Before this machine was put in operation, how had you been separating wet paper boards?

(Same obj.)

A. They used a hand saw with the teeth cut out and ground up to a sharp edge.
6 Q. Do you know whether or not the same appliance was in use elsewhere?

(Same obj.)

A. I don't know.

58 7 Q. Who first suggested the use of a saw for cutting paper boards in a wet state?

(Same obj.)

A. Mr. Eachus.
8 Q. Who arranged the saw, fixed up the table, and the appliances for running it?

(Same obj.)

A. I did that with his assistance; he and I together.
9. Q. As soon as the machine was in operation was there a patent applied for?

(Same obj.)

A. Yes, sir; I think that was in 1872.
10 Q. At whose suggestion was this application for patent made?

(Same obj.)

A. Mr. Eachus's suggestion.
11 Q. When you used the hand-saw for separatiag paper boards they were always in a wet state, were they not?

(Same obj.)

A. Yes, sir.

12 Q. Could you have separated them in a dry state by the use of a saw?

(Same obj.)

59 A. Not with the kind of a saw they used for the wet boards.

13 Q. Then would Mr. Eachus saw separate boards in a dry state?

(Same obj.)

A. Yes, sir; it would cut them, but it would leave them very rough.

14 Q. Then the wetness of the board facilitates the operation of cutting, does it not?

A. Yes, sir.

15 Q. Does Mr. Eachus's machine leave a kerf or waste behind?

A. Yes, sir.

16 Q. Was the saw used in Mr. Eachus's mill the circular saw used, exactly like one used for cutting wood?

A. Yes, sir; about the same; I have cut wood on it.

17 Q. Were the saw teeth sharpened and levelled in the same manner?

A. No, sir; the teeth are just the same as those used in any circular saw for cutting wood; for ripping boards a different saw is used.

18 Q. Are the saw teeth in Mr. Eachus machine sharpened and levelled in the same manner as a saw used for cross-cutting?

(Objected to, as leading.)

A. No, sir; there is no set, no bevel to the teeth.

60 19 Q. In sawing paper boards with the Eachus machine is the cutting done with the points of the teeth or by the sides of the teeth, or by both?

A. It is done by the point of the tooth.

X Ex.:

20 Q. Doesn't that last fact depend entirely upon the speed with which the saw is run, and the speed with which the board is advanced toward it?

A. Yes, sir; I suppose it does.

21 Q. The teeth of Mr. Eachus's cutters as shown in his patent are star shaped, are they not?

A. Yes, sir; what we call diamond point.

22 Q. Do you know whether a rotary cutter having a perfectly smooth circular edge without any indentations will cut wet paper boards satisfactorily?

A. I should judge not.

23 Q. When you were with Mr. Eachus before he put up his machine like the patented one didn't you find that a hand saw that had teeth cut wet board better than one which had a perfectly smooth knife-like edge?

A. I cannot answer that question. I didn't run the machine. I was there to do millwright work.

Re-ex.:

61 24 Q. Was there any other part of Eachus' saw but the point which would cut the board, no matter how fast it was fed?

A. Yes; I think if it was fed fast it would cut further back on the tooth.

25 Q. Then the perfectly flat edge of the tooth would cut?

A. Yes, if it was fed up fast.

26 Q. Did it operate on wet paper board in the same manner that a saw would in sawing wood?

A. Yes, I think it would. You can run a saw into wood until it will stop, and it would be the same way with this.

27 Q. Did you saw wood with the Eachus saw?

A. Yes; when it was new we put a board in and it cut it off.

Re-ex.:

28 Q. If I understand you aright the difference between Mr. Eachus' circular cutter and an ordinary wood saw is (apart from the question of sharpness) that the wood saw has its teeth "set," so that the kerf is wider than the metal of which the saw is made, while in the Eachus cutter the teeth are not "set," and the kerf is no wider than the metal?

62 A. That is the only difference.

(Signed) LEE F. WELSH.

Affirmed and subscribed before me, June 12th, 1880.

(Signed) GEO. M. RUPERT, *Examiner.*

JOHN W. BURKE, aff'd:

1 Q. Where do you reside, and what is your business, and how long have you been at it?

A. I reside at Doe Run. My business is paper making, and I have followed it all my life.

2 Q. Did you ever work for Mr. Eachus, and when?

A. Yes, sir; I went to him about 10 years ago, and have worked for him ever since.

3 Q. In what way did you separate wet paper boards when you first went there?

(Objected to; irrelevant.)

A. With a hand saw with the teeth out.

4 Q. When did you change the method of separating the wet boards?

(Same obj.)

A. We changed by having different sized rolls with grooves in them. They were in use a year and a half or two years.

5 Q. When did you begin to use the patented saw—the circular saw?

(Objected to; irrelevant.)

63 A. About 8 or 9 years ago.

6 Q. In using that patented saw was there any waste left?

A. Yes, sir.

7 Q. Did the saw make a perfectly smooth edge on the wet board, or was it jagged?

(Objected to, as leading.)

A. It was rough.

8 Q. Did you ever see the saw Exhibit B in operation?

A. Yes, sir.

9 Q. Was there any difference between the operation of this cutter and the operation of the Eachus cutter?

A. Yes, sir.

10 Q. What was that difference?

A. This cutter has a straight edge right through—no waste; the other had a good bit of waste.

11 Q. Was there any other difference?

A. No; I can't say that there was.

X Ex.:

12 Q. Where did you see the cutter like Exhibit B used?

A. Mr. Broomall's mill.

13 Q. When?

A. Just before he was stopped using it.

14 Q. Were you a workman there?

A. No, sir; I was up there.

64 15 Q. How long did you watch it running?

A. From 5 to 10 minutes, as nearly as I can tell you.

16 Q. How many revolutions was it making?

A. I suppose 800 or 900 revolutions.

17 Q. What kind of boards was it cutting, long or short fibre?

A. Long fibre board.

(Signed) JOHN W. BURKE.

Affirmed and subscribed before me, June 12, 1880.

(Signed) GEO. M. RUPERT, *Examiner.*

DAVID S. YOUNG, aff'd:

1 Q. Where do you reside, and what is your occupation, and how long have you followed it?

A. I reside in East Fallowfield township, Chester county; am a paper maker, and have been for 25 years past.

2 Q. Have you made paper boards during all that time?

A. Yes, sir; pretty much.

3 Q. How did you cut or separate wet paper boards?

(Obj'd to; irrelevant.)

A. We first used a saw with the teeth out, and also with the teeth in.

65 4 Q. How long have you been using a hand-saw for separating wet paper boards?

(Same obj.)

A. I am using a hand-saw still with the teeth in; have been using it 25 years.

5 Q. How far is your paper mill from Mr. Eachus'?

(Same obj.)

A. About 6 miles.

(Signed) D. S. YOUNG.

Affirmed and subscribed before me, June 12, 1880.

(Signed) GEO. M. RUPERT, *Examiner.*

It is agreed that a Patent Office copy of the patent No. 223,103 shall be offered in evidence in place of the original letters.

Meeting Aug. 3rd, 1880.

Present: Messrs. Pennypacker and Fraley.

CHARLES T. SHOEMAKER, sworn:

1 Q. Where do you reside, and what is your business?

A. In Philadelphia; am a saw maker.

2 Q. How long have you been in that business?

A. About thirty-three years.

66 3 Q. Did you or not manufacture a saw for James Eachus?

A. I have no knowledge on that point.

4 Q. (Model B exhibited.) Have you manufactured saws like this?

A. We have.

5 Q. What would you call that article?

A. I would call it a circular disc with projecting knives.

6 Q. What is the difference between it and a circular saw with No. 2 teeth?

A. Well, in the one case the operation is like a knife, separating the substance in which it comes in contact without removing particles of the same. Circular saw teeth are projecting points acting in the form of chisels or scoring tools, removing particles corresponding to their thickness or the "set" that may be given them.

(Exhibit A shown witness, and attention directed to the draft accompanying the letters patent.)

7 Q. Is the circular saw therein figured the one you have referred to in you previous answer?

A. Yes, sir; that is apparently a circular saw.

67 8 Q. Do the teeth of a saw such as is there figured cut the substance though which they pass?

A. It depends somewhat upon the way in which they are put in order, as they could be filed afterwards to the form of a projecting knife. In the form that the teeth are here in this paper they would drag particles out corresponding to the thickness of the saw blade or amount of "set" that might be put on them.

9 Q. Is a saw a cutter?

A. Oh, yes; a saw is a cutter, or a series of cutters. That is a rip saw, cutting similar to a chisel; while a cross-cut saw scores or drags the particles out.

10 Q. Is the saw figured in that draft a rip saw or cross-cut saw?

(Objected to, as immaterial.)

A. A cross-cut saw.

11 Q. Is the action of this disc with projecting knives similar to that of a saw?

A. No, sir.

12 Q. In what respect does that action differ?

A. One cuts like a knife, severing the substance without removing particles; in the saw the action is in the form of chisels, scoring and drag-ing portions of the substance out?

68 13 Q. For how many purposes have cross-cut saws similar to the one in the draft been used?

A. That I am unable to say; principally they have been used for wood.

14 Q. Have you known them to be used for other purposes?

(Objected to, as irrelevant.)

A. Yes, sir; such as vulcanized rubber and a species of *papier-maché*, and also in cutting paper pressed together.

15 Q. Were these materials you have mentioned wet or dry when cut?

(Objected to, as irrelevant.)

A. I can't say.

Cross-examined:

16 Q. Did you ever see a cutter like Exhibit B used upon wet or moist paper boards?

A. No, sir.

17 Q. Are you able to say from your experience whether a cutter having a simple circular edge without the waved line, such as is shown in that model, would cut such paper board satisfactorily?

A. I don't know about the satisfactorily; it would cut them; I can say that I have no practical knowledge of that line of business.

69 18 Q. What reason have you for saying that the cutter shown and described in complainant's patent, Exhibit A, are cross-cut saws?

A. From the form of the teeth.

19 Q. Does the drawing show or does the specification describe any "set" to the teeth?

A. No, sir; I wish to qualify that somewhat. Saws for cutting wood often have no "set," just make a smooth clean cut.

20 Q. In such case their operation is like that of the rip saw, as you have described it?

A. Both rip and cross-cut saws are run without "set" where a smooth cut is desired.

21 Q. Then, if I understand you aright, the cut of a saw without

"set" differs from that of a saw with "set," in that the former makes a smoother cut than the latter?

A. Yes; on account of the "set" itself projecting into the sides of the kerf being made by the teeth.

22 Q. Would you not call that Exhibit B a circular cutter in your business?

A. It is a series of knives on a circle.

70 23 Q. And according to your statement awhile ago a circular saw is also a series of cutters?

A. Yes, sir; not a series of slicing knives.

24 Q. Do you know which way, in which direction, that Exhibit B is intended to be run?

A. No, sir.

25 Q. Do you think it would make any difference in its operation on wet board which way it was run?

A. Yes, sir; there would be some difference.

26 Q. What would that difference be?

A. In one direction the operation would be more sudden and abrupt than in the other. It would be likely to knock out particles, as the curved lines are more gradual on one edge than on the other of the cutters.

27 Q. Then, when run in the direction so as to cut with those abrupt edges, it would operate like a saw without "set," would it not?

A. No, sir.

28 Q. Then the difference between the series of knives, as you call it, and the saw does not lie in the fact that the saw throws out pieces of the material while knives do not?

71 A. Yes; that is just the difference. Particles may be knocked out without being saw teeth if you like—particles may be knocked out with a club.

29 Q. If the only difference between a saw and a series of knives is the throwing out of particles, why does not the model Exhibit B become a saw when revolved in such a direction as to cut by throwing out particles?

A. It becomes more the principal- of a blunt-edged knife.

30 Q. If the series of blunt-edged knives throws out particles when cutting, wherein does their action differ from that of the series of cutters which you call a saw?

A. In the one case it is knocked out by a blunt rounded edge. And in case of the saw the particles are removed by the keenly sharped points of the saw tooth.

31 Q. Then the difference comes down to this, does it not, that in the one case you are speaking about a sharp saw, and in the other a very blunt one?

A. No, sir; in the case of one I am speaking about a sharp saw, and in the other of a series of projecting cutters or knives.

72 32 Q. If those knives throw out particles of the material being cut, wherein does their action differ from that of a blunt saw whose teeth have no "set"?

A. In that case the action would be somewhat similar.

33 Q. Do not you, as a saw-maker, know that the teeth of a saw adapted for the purpose of cutting soft or moist paper need not be keenly sharp?

A. I have never witnessed their working in that kind of material.

34 Q. Can you not make a better answer than that?

A. The dull teeth would certainly cut the substance.

35 Q. Would it not be a proper term to use of that model Exhibit B to call it a circular cutter? I mean would not any saw-maker recognize that as a fair description of it?

A. Well, as I said before, I call that a series of knives working on a circle. It is not what I call a circular cutter. Rotary shears, I should call a circular cutter. These terms are used sometimes, and they are not always correct. They are correct enough for practical purposes.

73 36 Q. Then it differs from what you would call a circular cutter in that its edge — irregular or in a waved line, while a circular cutter would have its edge in a perfect circle; is that correct?

A. Yes; that is about the difference.

37 Q. Is it not adapted for the purpose of cutting wet or moist paper board?

A. That is what I understand it was made for, yes.

38 Q. Your firm of Henry Diston and Sons are in the habit of receiving samples of articles to be cut with a request that you should make proper saws for cutting such articles, are you not, and it is part of the business of that firm as expert saw-makers to make saws adapted for the cutting of various kinds of materials?

A. Yes, sir.

39 Q. Your firm, I believe, make the saws used by the complainant here for cutting wet paper board?

A. I believe that is so.

40 Q. You also made the model Exhibit "B"?

A. Yes, sir; we make those cutters.

41 Q. Have they any definite trade name by which they are known commercially and sold?

74 A. I don't know that they have any particular name that we call them by.

42 Q. Are not all those forms of cutters which you make for use on wet paper commercially known and ordered and sold by the name of paper saws?

A. No; we would term that a circular knife. I don't know whether the name of the substance is used or not.

43 Q. You said a little while ago that it would be proper to term the model Exhibit B a circular cutter having an irregular edge or edges, and that you believed it was adapted for the purpose of cutting wet or moist paper board; am I correct?

A. Yes; that is substantially correct.

44 Q. Now please look at the specification of complainant's patent, Exhibit A, in the sixth paragraph, and state whether the only difference in your description just repeated and the description given by

the patentee of his cutters is *the* he uses the word serrated as applied to the edge, while you use the word irregular?

A. Yes. The edges of a circular disc can be formed by serrating to cut on different principles.

75 45 Q. In other words, they can be serrated into sharp teeth or into curved knives, such as shown in the model Exhibit B?

A. Yes, sir; that is about what I mean. I believe them to be serrated edges in both cases, though different principles are obtained.

Re-examined:

46 Q. What is your position in the firm of Henry Disston and Sons?

A. Superintendent of the saw department.

47 Q. Would a circular knife cut a paper board in a moist state?

A. Yes; it would cut it, but whether satisfactorily or not I am not prepared to say.

(Signed) C. T. SHOEMAKER.

Affirmed and subscribed before me, Aug. 3, 1880.

(Signed) GEO. M. RUPERT.

JOSEPH PALMER aff'd:

1 Q. Where do you reside and what is your business, and how long have you been [in] it?

A. I reside at Doe Run, Chester county; am a paper board manufacturer, and have followed that business 14 years.

2 Q. How have you been in the habit of cutting your paper boards?

(Objected to, as irrelevant.)

76 A. Some years ago we cut boards with a hand-saw ground to an edge. Afterwards we used rolls with grooves in them of just the right size. Within the last year we have been using a circular knife similar to Exhibit B, but smaller in size.

Cross-examined:

3 Q. You have not [a] partner in business?

A. No, sir.

4 Q. Was the paper board you cut within a year last past by means of a circular cutter like Exhibit B in a wet or moist condition?

A. Yes, sir.

(Signed) JOSEPH PALMER.

Affirmed and subscribed before me, Aug. 3rd, 1880.

(Signed) GEO. M. RUPERT.

WASHINGTON VANCE affirmed:

1 Q. Have you ever cut wet paper with a knife?

(Objected to, as irrelevant.)

A. I have; about 40 years ago.
2 Q. What was your business at that time?

(Same objection.)

A. I was engaged in making coarse paper—wrapping paper—and paper boards, but I didn't use a saw to cut them; I made
77 grooves in the rolls, the right size for the boards; that is the way we used to do.
(Signed) WASHINGTON VANCE.

Affirmed and subscribed before me, Aug. 3rd, 1880.
(Signed) GEO. M. RUPERT.

Defendant closes.
Complainant, in reply, called.

JAMES EACHUS aff'd:

1 Q. Are you the complainant in this case, and what is your business?
A. I am; my business is paper board manufacturer; have been in that business about ten years.
2 Q. State whether you have, since the opening of the testimony in this suit, tried any experiment with the cutter offered in evidence here as Exhibit B; and, if yea, describe such experiment.

(Objected to.)

A. I tried this cutter on shaft along with my saws and cutters, and they both were run at the same speed. The difference in the cutting of the material could not be told what machine done it. Both
78 threw out when they commenced to cut the board, and both left material in the groove after paper had been taken off. The grooves are what the saw passes through the paper into to make a firm bed for the paper to rest on; the- have boards with grooves in them, into which the saw passes down after going through the paper.
3 Q. Did either your cutter or the defendants raise any edge or burr on the edge of the paper board during the cut?
A. Yes; they did; the larger the groove it cut into the more the edge would be turned down; both cutters did this.
4 Q. How thick was the pile of board upon which you experimented in this way?
A. I tried them on piles of different thickness; from a quarter of one inch to an inch and a half.
5. Q. Which way of the grain of the board did you try it?
A. I tried it both ways.
6 Q. Was there any difference in the behavior of this cutter and your cutters when each operated the same way on the grain of the paper?

(Objected to.)

A. Not any.

79 7 Q. Where did you try this experiment, and about what time?

A. I tried it in my own mill on the 5th day of July last.

8 Q. Was the paper board upon which you experimented the ordinary board made by you in a moist condition?

A. It was upon board taken from a pile in the mill made by me about two days before. It was in a wet condition.

Cross-examined:

9 Q. Where did you obtain the cutter you used in this experiment?

A. I got it from Mr. Fraley. It was this same cutter, Exhibit B?

10 Q. Did this machine cut on that occasion without having a kerf?

A. It cut through, knocked out, and left an edge below; something in the groove.

11 Q. Did it cut so as to leave a kerf—a portion of the material in the groove?

A. Yes; it left a portion of the material turned down, and mine did too. They all left the same.

12 Q. What do you understand the kerf to be?

A. What I understand by kerf is the edge cut off.

80 13 Q. Is that kerf the thickness or width of the cutter used?

A. In this case it depends on how wide the groove is. It fills the groove and then cuts out the balance.

14 Q. Well, then, all the material that is separated from the board by the operation of the cutter you understand to be the kerf?

A. No; what I understand by the kerf is the edge left by the saw after it comes out.

15 Q. For what purpose did you ask a reissue of your patent?

(Objected to, as immaterial.)

I was told that a process would cover more than a mere machine, and so I applied for a process.

16 Q. Did any one assist you in making your first machine?

(Same objection.)

A. The hands I had employed in the mill assisted me.

17 Q. How had you been in the habit of cutting paper boards before this patent was issued to you?

(Same objection.)

A. I had rolls to suit the sizes of the boards made usually. My hands have cut them with a hand-saw with the teeth off,

81 and also with the teeth on.

18 Q. In your experiment on the 5th of July did you run this machine and your cutter at the same time?

A. Yes, sir; I used them on the same shaft and at the same time.

19 Q. What is the diameter of your saw?

A. Ten inches.

(Signed) J. EACHUS.

Affirmed and subscribed August 3rd, 1880.
(Signed) GEO. M. RUPERT.

WILLIAM EACHUS, aff'd:

I am 38 years of age; reside in Wagontown, Chester county, Pa.; my occupation is lumber dealer.

1 Q. Have you any interest in the subject-matter of this suit?
A. I have not.

2 Q. Have you heard the testimony just given by the complainant respecting an experiment made by Exhibit B on the 5th day of July? State whether you were present at that experiment and whether you observed the operation of the cutters.
A. I was there and saw them in operation.

3 Q. Was there or not any difference in the operation of the
82 model Exhibit B and the complainant's cutters upon the moist paper board?
A. There was no difference that I could notice.

4 Q. Did you examine the grooves beneath the different cutters after the operation?
A. I did.

5 Q. Did you find any wast- in the groove beneath Exhibit B which had been thrown down into the groove by the operation of the cutter?
A. I did.

Cross-examined:

6 Q. Did the machine known as Exhibit B leave any kerf?
A. Yes, sir.

7 Q. Are you a surety of your brother in this suit?
A. I am.
(Signed) WM. EACHUS.

Affirmed and subscribed Aug. 3rd, 1880.
(Signed) GEO. M. RUPERT.

83 (Endorsed:) Circuit c't of U. S., eastern district of Penna. No. 109. Ap'l sess., 1879. In equity. Eachus *vs.* Broomall. Depositions. Filed October 27, 1880.

84 United States Circuit Court, Eastern District of Pennsylvania.
In Equity.

EACHUS *vs.* BROOMALL. } No. 109. April Sess., 1879.

It is hereby stipulated and agreed by and between solicitor for the complainant and solicitor for defendant in the above cause that the copies annexed hereto may be used in this cause for all purposes for which they are relevant under the pleadings therein, the same and with the same effect as if said copies had been duly certified by the Patent Office, under the act of Congress relating to such certification,

and had been duly marked by the special examiner appointed in this cause.

Said copies are as follows:

Reissued letters patent No. 6,315, dated March 2d, 1875, granted to James Eachus (marked Compl't's Exhibit Eachus, Reissued).

Specification and drawing of letters patent No. 142,154, dated August 26th, 1873, granted to James Eachus (marked Defendant's "Exhibit Eachus Original Patent").

Specification and drawing of letters patent No. 223,103, dated Dec. 30, 1879, granted to John A. Berstler (marked "Defendant's Exhibit Berstler Patent").

(Signed) CHAS. H. PENNYPACKER,
For Defendant.

(Signed) JOS. C. FRALEY,
Sol'r for Compl't.

85 *No.* 6,315. *Reissue.*

The United States of America to all to whom these presents shall come:

Whereas James Eachus, of Coatesville, Pennsylvania, has presented to the Commissioner of Patents a petition praying for the reissue of letters patent for an alleged new and useful improvement in process of cutting wet paper (for which letters patent were issued to him, dated August 26, 1873, which letters having been surrendered, the same have been cancelled and new letters ordered to issue to him as an amended specification), a description of which invention is contained in the specification of which a copy is hereunto annexed and made a part hereof, and has complied with the various requirements of law in such cases made and provided; and

Whereas, upon due examination made, the said claimant is adjudged to be justly entitled to a patent under the law:

Now, therefore, these letters patent are to grant unto the said James Eachus, his heirs or assigns, for the term of seventeen years from the twenty-sixth day of August, one thousand eight hundred and seventy-three, the exclusive right to make, use, and vend the said invention throughout the United States and the Territories thereof.

In testimony whereof, I have hereunto set my hand and caused the seal of the Patent Office to be affixed, at the city of Washington, this second day of March, in the year of our Lord one thou-
86 sand eight hundred and seventy-five, and of the Independence of the United States of America the ninety-ninth.

[SEAL.] B. S. COWEN,
Acting Secretary of the Interior.

Countersigned:
ELLIS SPEAR,
Acting Commissioner of Patents.

(Here follows diagram, marked p. 87.)

J. EACHUS.

Process of Cutting Wet Paper.

No. 6,315. Reissued March 2, 1875.

Fig. 3.

No. 215. Eachus et Bunnell } p. Pl.

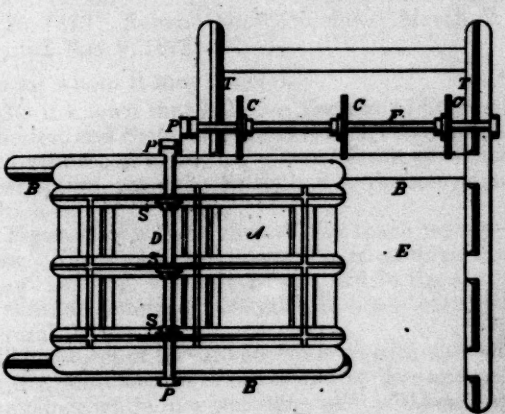


Fig. 1.

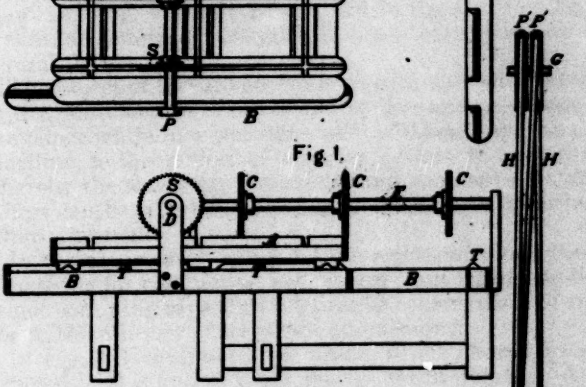


Fig. 4.

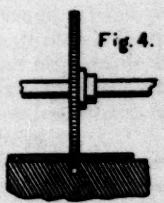
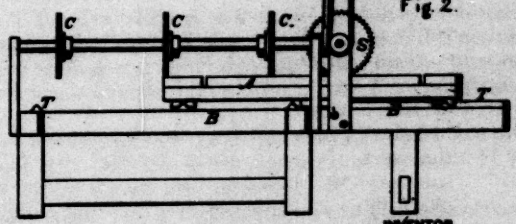


Fig. 2.



WITNESSES

Geo. P. Upham.

E. H. Bates

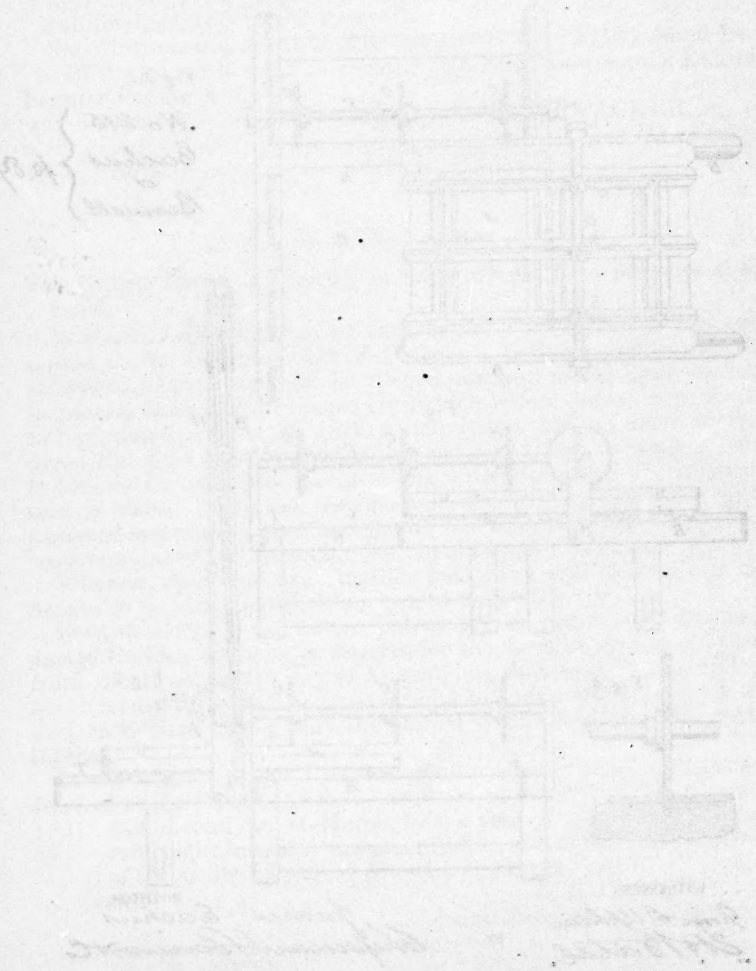
BY

INVENTOR

James Eachus

Whiteman Bonn & Co.

ATTORNEYS



88 UNITED STATES PATENT OFFICE.

JAMES EACHUS, of Coatesville, Pennsylvania.

Improvement in Processes of Cutting Wet Paper.

Specification forming part of Letters Patent No. 142,154, dated August 26, 1873; Reissue No. 6,315, dated March 2, 1875; Application filed May 9, 1874.

To all whom it may concern:

Be it known that I, James Eachus, of Coatesville, in the county of Chester, and State of Pennsylvania, have invented a new and improved process of cutting paper boards, of which the following is a description, reference being had to the accompanying drawings, in which—

Figure 1 is a front view of my machine for conducting my process. Fig. 2 is a side elevation of such machine. Fig. 3 is a top view, and Fig. 4 is a detail of a saw in the act of cutting.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to trim and cut heavy paper used in the manufacture of boxes and books; and it consists in subjecting the paper while in a wet state, as it is taken from the paper-making machine, to the action of circular cutters having serrated edges, whereby the sheets are cut evenly and economically, and the trimmings can be returned to the paper machine without regrinding or other treatment.

In the annexed drawings I have represented one practical form of a machine for conducting my process; but I desire to be understood as not confining myself to the precise construction of such machine, nor to the number of serrated cutters shown.

In Fig. 3, E designates the frame, which should be strongly constructed. B B and T T are guides on frame E. A is a two-way carriage, which is constructed in such manner as to play freely on the guides B B and T T. D and F are saw-shafts, which are mounted upon adjustable bearings bolted to frame E. C C and S S S are circular saws or cutters, having serrated edges, adapted for the purpose intended, which saws are secured upon shafts D and F by adjustable collars.

For the purpose of operating this machine, shafts D and F are provided with pulleys P P. Motion is communicated by belts H H, Fig. 2, from a shaft, G, on which are pulleys P′ P′.

The paper to be cut is put upon the carriage A. The pile is composed of a number of large sheets as they are taken from the paper-making machine in a very wet condition. The carriage is then drawn upon the guides B B, saws S S S cutting through the paper; thence at right angles to the first direction upon guides T T, saws C C C cutting through the pile in the new direction, the result of the operation being to trim the edges of the sheets and cut each sheet into four parts.

The saws can be adjusted on shafts D and F, so as to trim and cut the sheets any desired size.

It will be seen from the above description that I take sheets of paper, while they are in a wet condition, directly from the paper-making machine, and pass the saws over them, thereby trimming their edges, and leaving them of an equal thickness throughout, and dividing them into smaller sheets. This process of sawing cannot be performed successfully and without tearing the surface of the sheets unless the sheets are wet, and in the condition in which they leave the paper-making machine.

I make no claim to the arrangement of circular saws and carriages for the purpose of sawing logs or any kind of wood; nor do I broadly claim the machine herein described for sawing wood.

I am aware that paper board has heretofore been sawed when in a dry state, and I therefore lay no claim to such invention, which leaves the edges of the paper thus sawed in a jagged condition, the action of the saw-teeth tending to separate the fibers of the paper board in the line of the kerf; whereas, when the paper board is sawed in a wet state, directly after leaving the paper machine, the edges are left smooth, the saws causing an interlocking of the fibers in its path through the paper, and the trimmings of the paper being in a condition to be returned to the vat without regrinding, which would not be the case with trimmings of paper board sawed in a dry state.

What I claim as new, and desire to secure by letters patent, is—

The process of sawing paper board as herein described, consisting in sawing the paper board while it is in the wet state in which it is taken from the paper-making machine, substantially as described, and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JAMES EACHUS.

Witnesses:
GEORGE E. UPHAM.
F. J. MASI.

(Here follows diagram, marked p. 89.)

90 UNITED STATES PATENT OFFICE.

JAMES EACHUS, of Coatesville, Pennsylvania.

Improvement in Sawing Machines.

Specification forming part of Letters Patent No. 142,154, dated August 26, 1873; application filed February 23, 1872.

To all whom it may concern:

Be it known that I, James Eachus, of Coatesville, in the county of Chester, State of Pennsylvania, have invented a new and useful machine for cutting paper boards, of which the following is a specification:

J. A. BERSTLER.
Paper-Cutter.

No. 223,103. Patented Dec. 30, 1879.

No. 215.
Eachus.
W.
Cromwell
p. 91.

Fig. 1.

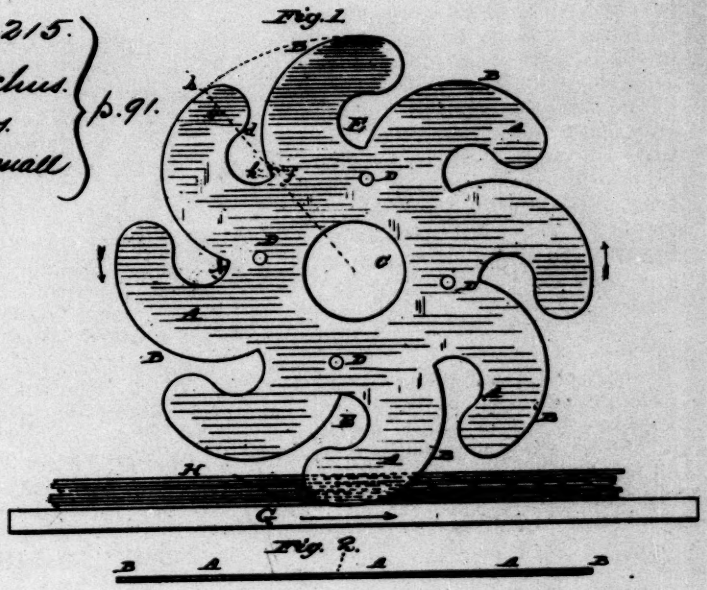


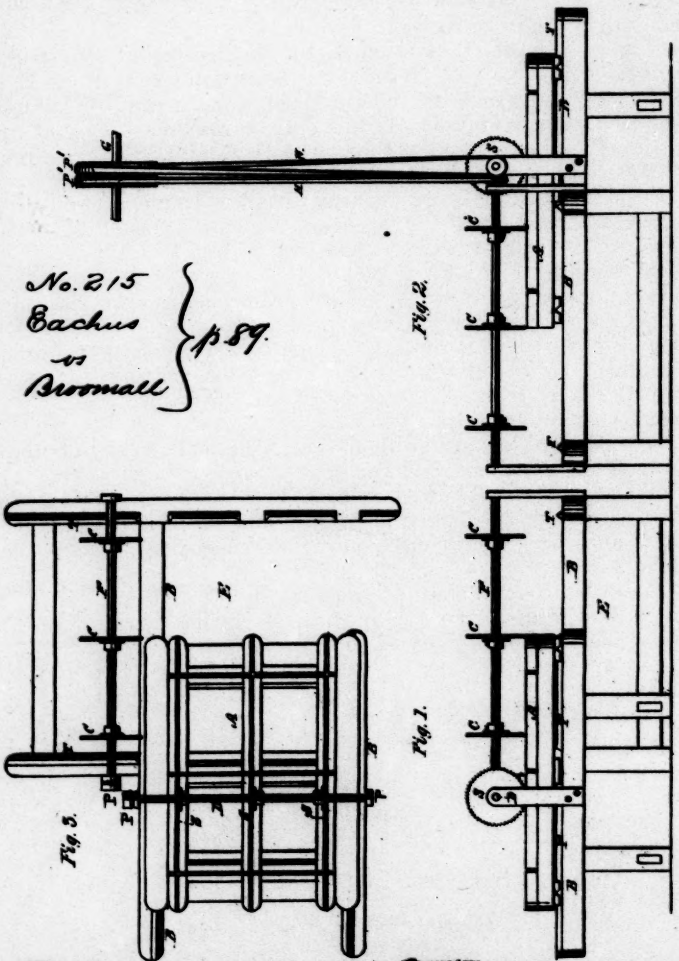
Fig. 2.

Witnesses.
Geo. Pinkenburg
Fred. G. Dieterich

Inventor
John A. Berstler
by Daniel Breed
Atty

J. EACHUS.
Sawing-Machines.

No. 142,154. Patented August 26, 1873.



No. 215
Eachus
vs
Broomall
p. 87.

Witnesses.
Lyrid Does
Burke Welch

Inventor.
James Eachus

The nature of my invention consists in combining six adjustable circular saws upon two shafts, set at any angle to each other, and a two-way carriage supported by a frame, and provided with guides so as to work easily and carry the material to be cut. The object of the invention is to trim and cut heavy paper used in the manufacture of books and boxes.

Figure 1 is a front view of my invention; Fig. 2, a side elevation; and Fig. 3, a ground plan.

In Fig. 3, E is the frame, which should be strongly constructed and in the form of an L. B B and T T are guides on frame E. A is a two-way carriage, constructed in such a manner as to play freely upon guides B B and T T. D and F are saw-shafts mounted upon adjustable bearings bolted to frame E. C C C and S S S are circular saws, secured upon shafts D and F by adjustable collars.

For the purpose of operating my machine, shafts D and F are provided with pulleys P P. Rotation is communicated by belts H H, Fig. 2, from a shaft, G, on which are pulleys P′ P′.

Upon carriage A, Fig. 3, is placed the wet paper to be cut. The pile is composed of a number of large sheets, as they are taken from the paper-machine. The carriage is then drawn upon the guides B B, saws S S S cutting through the paper; thence at right angles to the first direction upon guides T T, saws C C C cutting through the pile in the new direction, the result of the operation being to trim the edges and cut each sheet in four.

The saws can be adjusted upon shafts D and F, so as to trim and cut the sheets to any desired size.

I make no claim to the arrangement of circular saws and carriages working upon guides for the purpose of cutting logs, blocks of wood, wood of any kind, or any other material except paper; but

I claim—

The combination of shaft D, shaft F, saws S S S and C C C, carriage A, and frame E, for the purpose of cutting binders' and box-makers' paper, substantially as shown and described.

JAMES EACHUS. [L. S.]

Witnesses:

LEWIS BURKE. [L. S.]
LEE WELCH. [L. S.]

(Here follows diagram, marked p. 91.)

92 . UNITED STATES PATENT OFFICE.

JOHN A. BERSTLER, of Coatesville, Pennsylvania.

Improvement in Paper-Cutters.

Specification forming part of Letters Patent No. 223,103, dated December 30, 1879; application filed September 11, 1878.

To all whom it may concern:

Be it known that I, John A. Berstler, of Coatesville, Chester

county, in the State of Pennsylvania, have invented an improvement in paper-cutters, of which the following is a specification.

The invention relates to rotary paper-cutters; and it consists of a series of curved radial blades projecting from the body of the cutter and having rounded ends, with wide interspaces between the blades.

The object of this improvement is to cut wet paper without any waste of material and leaving the edges of the cut paper smooth.

Figure 1 of the drawing is a side view of my improved cutter in position for cutting a pile of paper, H, upon the edge of a table, G, in the usual manner. Fig. 2 is a view of the edge of the cutter.

I prefer to make the cutter from a thin plate of steel—say No. 20 wire-gage. The plate is first cut out round, of the desired size; after which the series of blades A are laid off as follows: With *f* as a centre, describe the arc *b h* as the edge of the curved radical blade A. Then, taking the point *e* as a centre, describe the arc *b d* for the rounded end of the blade A, and then complete the outlines by a semi-circle, *d h*, and finish up one of the blades. The other blades are made in the same way. Thus the cutting follows the arcs of circles, which is the simplest mode of operation.

The cutter is to have an axle, in the usual way, passing through the hole C, Fig. 1, and collars secured by bolts in the holes D; but it is not necessary to describe the operating machine, as my improvement is limited to the cutter. The narrow curved blades A with the wide interspaces act like a series of independent knives, one knife completing, or nearly completing, its stroke before the next knife or blade begins to cut, as will be easily understood from Fig. 1.

This cutter will trim the edges of a pile of paper, or divide the pile, without any waste of material and without making any ragged edges on the paper, and will work in damp paper, which is very difficult to cut. The edge of the cutter is left the full thickness of the plate, as seen in Fig. 2.

Having described my invention, what I claim is—

A paper-cutter having a series of curved blades, A, of the full thickness of the plate, projecting from the body of the cutter, with wide interspaces between the blades, substantially as and for the purposes set forth.

The above specification of said invention signed and witnessed, at Coatesville, this 30th day of August, A. D. 1878.

JOHN A. BERSTLER.

Witnesses:
JOHN W. TOWNSEND.
BENJ. T. LEWIS.

93 UNITED STATES OF AMERICA, *Eastern District of Pennsylvania*, } *sct.:*

I, Samuell Bell, clerk of the circuit court of the United States of America for the eastern district of Pennsylvania, in the third circuit, do hereby certify the foregoing to be a true and faithful copy of the original pleas and proceedings in the case of Eachus *vs.*

Broomall, No. 109, April sess., 1879, on file and now remaining among the records of the said court in my office.

In testimony whereof I have hereunto subscribed my name and affixed the seal of said court, at Philadelphia, this second day of February, in the year of our Lord one thousand eight hundred and eighty-two, and of the Independence of these United States the one hundred and sixth.

[SEAL.] SAMUEL BELL,
Clerk of C. C.

Endorsed on cover: E. Pennsylvania C. C. U. S. No. 215. James Eachus, appellant, *vs.* Joshua B. Broomall. Filed 24th May, 1882.

115-429

Supreme Court of the United States.

JAMES EACHUS,

APPELLANT,

vs.

JOSHUA B. BROOMALL,

APPELLEE.

October Term, 1884.

No. 215.

BRIEF FOR APPELLANT.

WAYNE MACVEAGH,
GEORGE TUCKER BISPHAM,
JOS. C. FRALEY,

Of Counsel for Appellant.

Supreme Court of the United States.

JAMES EACHUS
vs.
JOSHUA B. BROOMALL.

OCTOBER TERM, 1884.
No. 215.

BRIEF FOR APPELLANT.

STATEMENT OF THE CASE.

This is an Appeal from a Decree of the Circuit Court of the United States for the Eastern District of Pennsylvania, dismissing a bill in Equity filed by the appellant, James Eachus, against the appellee, Joshua B. Broomall, for infringement of a patent.

The Bill alleged, in the usual form, infringement of complainant's Reissued Letters Patent No. 6315, dated March 2nd, 1875, for improvement in processes of cutting wet paper, and prayed an injunction, account of profits, and assessment of damages. The Answer set up, as defenses:

I. That the plaintiff was not the inventor or discoverer of said process.

II. That the "reissue was improper, and confers no additional or extended rights upon said plaintiff, inasmuch as the original claim, or the second claim, was not patentable."

III. A denial that the public had acquiesced in the exclusive rights of the plaintiff.

IV. A denial of infringement; and

V. That complainant had an adequate remedy at law.

Under the allegation that the plaintiff was not the inventor of the thing patented, the defendant gave no notice, either in the Answer, or otherwise, of the names of prior users, or of the places of prior use. A preliminary injunction was granted by the Court below, and thereafter proofs were duly taken in the cause by both parties, and it was brought to a hearing on October 25th, 1881. At the hearing, the only points urged by defendant and entertained by the Court were, *first*, the question of infringement, and, *second*, the question of the validity of the reissue, and, though no opinion was filed, it may not be improper to state that the ground of dismissal of the Bill was the supposed invalidity of the reissue because of alleged enlargement or change of invention from the subject-matter covered by the original patent.

ASSIGNMENT OF ERRORS.

The error assigned is the dismissal of the Bill of Complaint and the dissolution of the injunction.

BRIEF OF ARGUMENT.

I.

The defense of want of novelty cannot be considered under the pleadings in this case, as no notice of prior knowledge or use is given in the Answer, and all evidence touching this point was seasonably objected to. (Revised Statutes, section 4920.)

II.

It is not clearly understood just what objection to the reissue is intended by the allegation of the Answer "that all such reissue was improper, and confers no additional or extended rights upon said plaintiff, inasmuch as the original claim, or the second claim, was not patentable." As a matter

of fact it was considered by the Court below to mean that the reissue was void for change or enlargement of subject-matter.

Appellant contends that under this allegation no such defense was properly the subject of consideration, it being the duty of the defendant to clearly set out the specific objection relied on, in order that, if evidence upon the subject be needed, complainant may have the opportunity to meet such point.

This case had the misfortune to be argued just at the time when it became evident from the decisions of the Supreme Court of the United States that some stringent ruling upon the general subject of reissued patents was about to be made in that tribunal, and in consequence of this feeling the present reissue suffered (it is submitted without proper grounds) the fate that almost immediately thereafter overtook a vast number of reissued patents.

The original patent was granted to the complainant on August 26th, 1873. The reissued patent was applied for on May 9th, 1874, less than nine months after the grant of the original patent. It is therefore submitted that whatever objections may be taken to the reissue, laches on the part of the patentee is not one of them, especially as there is no evidence in the record of the intervention of any rights on the part of the public by user of the invention.

The drawings of the two patents are substantially identical, and represent a framework carrying a series of circular saws and suitable machinery for rotating them. So far as the description of this machinery is concerned, the language of the two specifications is substantially the same. The original patent stated, "The nature of my invention consists in combining six adjustable circular saws upon two shafts set at any angle to each other, and a two-way carriage supported by a frame, and provided with guides so as to work easily and carry the material to be cut. The object of the invention is to trim and cut heavy paper used in the manufacture of books and boxes."

After a description of the machine by literal reference to the drawings, the patent continues:

"Upon carriage A, Fig. 3, is placed the *wet* paper to be cut.

The pile is composed of a number of large sheets, *as they are taken from the paper-machine.*"

The operation of the machine upon the wet paper is described, and its result is stated to be that the edges are clean and the sheets are cut into fours.

The specification concludes as follows:

"I make no claim to the arrangement of circular saws and carriages working upon guides for the purpose of cutting logs, blocks of wood, wood of any kind, or any other material except paper; but

"I claim—

"The combination of shaft D, shaft F, saws S S S and C C C, carriage A, and frame E, *for the purpose of cutting binders' and box-makers' paper*, substantially as shown and described."

This is the only claim in the original patent.

The reissued patent states that the object of the invention is—

"To trim and cut heavy paper used in the manufacture of boxes and books; and it consists in subjecting the paper while in a wet state, as it is taken from the paper-making machine, to the action of circular cutters having serrated edges, whereby the sheets are cut evenly and economically, and the trimmings can be returned to the paper-machine without regrinding or other treatment."

Then follows a description of the operation of the machine, in substantially similar language to that of the first specification, after which the reissue concludes with the following explanation, disclaimer, and claim:

"It will be seen from the above description that I take sheets of paper, *while they are in a wet condition, directly from the paper-making machine*, and pass the saws over them, thereby trimming their edges, and leaving them of an equal thickness throughout, and dividing them into smaller sheets. This process of sawing cannot be performed successfully and without tearing the surface of the sheets unless the sheets are wet, and in the condition in which they leave the paper-making machine.

"I make no claim to the arrangement of circular saws and carriages for the purpose of sawing logs or any kind of wood,

nor do I broadly claim the machine herein described for sawing wood.

"I am aware that paper-board has heretofore been sawed when in a dry state, and I therefore lay no claim to such invention, which leaves the edges of the paper thus sawed in a jagged condition, the action of the saw-teeth tending to separate the fibres of the paper-board in the line of the kerf; whereas, when the paper-board is sawed in a wet state, directly after leaving the paper-machine, the edges are left smooth, the saws causing an interlocking of the fibres in its path through the paper, and the trimmings of the paper being in a condition to be returned to the vat without regrinding, which would not be the case with trimmings of paper-board sawed in a dry state.

"What I claim as new, and desire to secure by letters patent, is—

"The process of sawing paper-board, as herein described, consisting in sawing the paper-board while it is in the wet state in which it is taken from the paper-making machine substantially as described, and for the purpose set forth."

The evidence in the case confirms the accuracy of these statements as to the advantages of the patentee's method, and shows that, as stated by the patentee, the different processes theretofore employed for obtaining paper, or "board," in sheets of regular size, consisted either in the use of grooved rolls on the paper-making machine itself (Testimony of Jabez Wilson; Record, page 18), which produced single sheets of a given size, but required as many different rollers as there were sizes to be obtained, or else the cutting of the paper when dry by means of what are known as rolling shears (Testimony of Cope; Record, page 14, questions 35 to 37), a method only capable of operating upon a single thickness of dry paper. This mode of cutting was practically impossible with wet paper (Testimony of John Berstler; Record, page 20, questions 20 to 22).

By the Eachus method of using a serrated cutter upon the paper in the wet state in which it comes from the paper-making machine, a pile of sheets can be cut at once; the trimmings are in condition to be returned to the vat without regrinding, and the edges of the sheets are left smooth. Obviously, it is adapted

to the production of sheets of any size, without other change than the adjustment of the cutters on their shaft.

In the evidence offered upon the question of infringement the principle of operation upon which this method depends for success is clearly brought out, and may be summarized in the statement that the peculiarity of this soft and pulpy material requires for successful cutting a series of strokes such as only can be given by a serrated edge revolving with great rapidity.

It is submitted, therefore, that if the original patent had contained the claim now found in the reissue for the process, or the method, of thus treating a peculiar material, such claim would have unquestionably been valid. It remains to examine whether it is invalidated by introduction through the medium of reissue.

Viewed narrowly, the claim of the original patent might be termed a claim for a machine, and, by an equally narrow construction of the law as supposed to be laid down in the cases adverted to hereafter, it may be held that a patent for a "machine" cannot be reissued to cover a "process." The present case requires for the affirmance of the decree below that both these narrow views of the facts and of the law should be applied, since if either point be decided in favor of the appellant the judgment cannot be sustained.

1st. THE CLAIM OF THE ORIGINAL PATENT IS NOT MERELY A CLAIM FOR A "MACHINE."

It will be observed that the disclaimer of the original patent particularly points out the fact that it is not upon the machine itself that the patentee bases his claim for a useful invention, since he specifically says that he does not claim the machine just described for "any other material except paper"; and, in the specification, the "paper" is described as being "*wet*," and as being composed of a number of sheets "*as they are taken from the paper-machine*;" furthermore, in the claim of the original patent this idea is carried out by the insertion of the words "for the purpose of cutting binders' and box-makers' papers, substantially as shown and described." This renders it clear that the idea of the patentee, crudely brought out in his original specification, was that he did not wish to patent the machine

itself broadly, but merely had reference to a particular use upon a particular and specified material. The original patent papers appear to have been drawn (Record, page 11) by a machinist named Cope, who lived about two and a half miles from West Chester, a small town in the eastern part of Pennsylvania. The application, written by him, was first rejected, but afterward he succeeded in getting the patent in its original form (Record, page 12). Fortunately for the patentee, it appears that he did not long remain thus *inops consilii*, but promptly applied for and obtained the reissue with the present claim.

Now, the objections to this claim must be either that it is an enlargement of the original claim, or else that it is a change of the invention.

Even supposing it to be the former, there was no laches on the part of the patentee which prevented such enlargement, and this Court has repeatedly recognized the right to amend by prompt application to the Patent Office, an error growing out of a too limited claim.

But, upon close examination it will be seen that while the claim is enlarged in one direction, in another it is contracted. Thus, the reissue only requires that a circular cutter having serrated edges should be used to trim the paper, while the original perhaps required a combination of such cutters with their carriages; but, on the other hand, the reissue introduces a further express limitation, which is not found in the claim of the original patent, namely, that the paper-board must be sawed *while it is in the wet state in which it is taken from the paper-making machine*, whereas, if the claim of the original patent be a claim for a *machine*, it would be infringed by the use of that machine upon dry paper.

Such use is specifically disclaimed in the reissue.

It is therefore submitted that, taken as a whole, the claim of the reissued patent is not really broader than that of the original.

As to the objection that the invention has been changed, it is only necessary to recur to what has been above stated, namely, that the invention is proven to have really consisted in operating upon a peculiar kind of material, with a peculiar

kind of cutter. The original patent certainly mentions both the material and the cutter to be used; and, however inartificially, attempts, by disclaimer of use upon other materials, to limit the patentee's claim to the real subject invented by him. Taking, then, the two instruments together, it cannot be said, upon a fair and reasonable construction, that they necessarily intend subjects so different as to render the reissue void; and, unless some rigid principle of law prevents the use of the word "process" in the one, where the word "machine" had been used in the other, there is no discrepancy which places the correction beyond the power of the Commissioner of Patents.

2d. IF A PROCESS IS PROPERLY PATENTABLE, THERE IS NO RULE OF LAW WHICH PROHIBITS ITS CLAIM BY REISSUE, WHERE THE ORIGINAL PATENT HAD MISTAKENLY CLAIMED A MECHANISM.

As certain extracts from opinions of this Court will doubtless be relied on by the appellee to form a basis for such supposed rule, a very brief analysis of the cases referred to is here given.

In the case of Powder Co. *vs.* Powder Works, 98 U. S., 126, the claim of the original patent was construed to be for certain processes of exploding nitro-glycerine, and the reissue was for compounds with which those processes, as the Court states, had no connection. "They were not processes for making those compounds, and in describing them the compounds were not mentioned. The invention of the one did not involve the invention of the other. The two inventions might have been made by different persons and at different times." (Ibid., p. 137.)

"If the patent had not been for the mode or process of exploding nitro-glycerine, but for the process of compounding nitro-glycerine with gunpowder and other substances, inadvertently omitting to claim the exclusive use of the substances so produced, the case would have been one of very different consideration." (Ibid., p. 136.)

The Court contrasts the case of Goodyear's patent with the one under consideration, and although the *claim* presented the same technical difference, points out the fact that in Goodyear's case "the last patent differs from the first only in stating more clearly and definitely the real principles of the invention."

In James *vs.* Campbell, 104 U. S., 356, the claim of the original patent being for a machine the reissue claimed, *inter alia*, the simultaneous postmarking of letters and cancellation of the stamps thereon in the manner and by the means set forth."

Terming this claim one for a process, the Court says, "But a process and a machine for applying the process are not necessarily one and the same invention. They are generally distinct and different."

If the claim in question had been construed as being anything more than a claim for *operating* or *using* a specific piece of mechanism already claimed, it would have been void as being an attempt to patent an abstract result. When thus construed so as to save its validity, such operation or use was obviously fully covered by the claim for the mechanism, which had already been held void on other grounds.

Heald *vs.* Rice, 104 U. S., 737, did not raise the question in issue here, as in both patents the claims were for mechanical devices, and the dicta as to process patents were used only by way of a convenient analogy.

In Wing *vs.* Anthony, 106 U. S., 142, the original patent for a photographic camera had claimed "the within described plate-holder in combination with the frame in which it moves, constructed and operated in the manner and for the purpose substantially as herein set forth."

The reissue claimed "the bringing of the different portions of a single plate, or several smaller plates, successively into the field of the lens of the camera, substantially in the manner and for the purpose specified."

In the opinion of the Court, this claim is referred to as being for a "process," but examination shows that the word is there used, not in the sense approved in Tilghman *vs.* Proctor, 102 U. S., 707, but as synonymous with "function" or "mode of operation" of a piece of machinery, and that the real ground of objection was that by thus patenting the *result*, the patentee excluded all other mechanisms contrived to accomplish the same object, and really obtained a patent for a principle.

It is as if in the present case the appellant had claimed by

his reissue "the division of paper-board into sheets of various sizes."

It is thought that the foregoing analysis of the decisions, which on a superficial examination would seem to conflict with appellant's position, shows that they condemn the claiming of "processes" by reissue in only two classes of cases,—

a. Where the process of the reissue is different from that of the original. So that even if the claim of the former had been likewise *in terms* for a process, the reissue would have changed the invention.

b. Where the word "process" in the reissue is only a cover for claiming a *principle* or *abstract result.*

In the case at bar neither of these objections exists.

Not only is the specified method the same in both patents, but it is open to the world to cut paper-board in several *known* ways disclosed by the reissue itself, and in any *other* way to be discovered, save the 'sawing of it while in a wet condition by the action of a rotary cutter having serrated edges."

III.

The question of acquiescence in the complainant's rights has of course no bearing, except upon the propriety of granting a preliminary injunction, and hence need not be discussed as a defence at this time.

IV.

The defence of non-infringement was based upon the supposed difference in shape of the teeth of defendant's cutter as compared with those of the patent.

The cutter of complainant, as represented in his drawing (Record, p. 34), has radial or "star-shaped" teeth. Those of defendant's circular cutter are curved, like the drawing of the Berstler patent (Record, p. 37) used by him. (Berstler had been an employé of the complainant at the time when his process was being used, and after leaving his employ took out this patent. Rec., p. 18.)

To the minds of several witnesses called by defendant, this variation of outline in the serrations presented features of dif-

ference from the complainant's cutter, but on cross-examination all of them admitted that unless the edge of the cutter was serrated or had indentations in it, it would not work on wet paper. (Cope, p. 16, X Q. 60; Berstler, p. 20, X QQ. 21, 23; Welsh, p. 23, X Q. 22; Shoemaker, p. 27, Q. 17.)

Another witness thought that the defendant's cutter threw out less waste than the star-shaped cutter used by complainant (Burke, p. 25).

The best answer to all of these criticisms is found in the testimony of James and William Eachus (Rec., pp. 31–33), who tried the defendant's own cutter side by side with the complainant's upon the same shaft, on piles of wet paper-board of varying thickness, both with and against the grain of the board. In these trials no difference in operation was perceptible; both threw out waste to the same extent, and both raised a slight burr on the edge of the board.

In view of these facts it is preposterous to claim that complainant's claim for sawing the board while in a wet condition is evaded by the use of a saw whose outline varies slightly from the exact form shown in his drawing, but which does the same work in precisely the same manner.

V.

The defence that complainant had an adequate remedy at law needs no comment.

His patent does not expire until 1890, and he is of course entitled to equitable relief against infringement.

It is submitted that the decree of the Court below should be reversed, and an injunction and account awarded as prayed in the bill.

WAYNE MACVEAGH.
GEO. TUCKER BISPHAM.
JOS. C. FRALEY.

116-447

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JAMES H. McKENNEY,
CLERK.

Supreme Court of the United States.

JAMES EACHUS,
APPELLANT,

vs.

JOSHUA B. BROOMALL,
APPELLEE.

October Term, 1884.

No. 215.

BRIEF FOR APPELLEE.

CHAS. H. PENNYPACKER,
Of Counsel for Appellee.

WAYNE MACVEAGH,
GEORGE TUCKER BISPHAM,
JOSEPH C. FRALEY,
Of Counsel for Appellant.

Supreme Court of the United States.

JAMES EACHUS,
vs.
JOSHUA B. BROOMALL.

OCTOBER TERM 1884.

No. 215.

APPEAL FROM THE DECREE OF CIRCUIT COURT OF THE UNITED STATES E. D. OF PENNSYLVANIA, DISMISSING APPELLANT'S BILL IN EQUITY.

BRIEF FOR APPELLEE.

This is an effort on the part of James Eachus to sustain a patent, which is void because the reissue thereof in 1875, differs materially from the original patent granted in 1873.

1873, No. 142—154.	1875, No. 6315.
SAWING MACHINE—JAMES EACHUS, Coatesville, Pa.	PROCESSES OF CUTTING WET PAPER.
"A sawing-machine table is "so arranged as to run on tracks "placed at right angles to each "other. Claim—the combi- "nation of shaft D, shaft F, "saws SSS and CCC, car- "riage A, and frame E, for the "purpose of cutting binders "and box makers papers, sub- "stantially as shown and des- "cribed."	"The process of sawing pa- "per boards as herein describ- "ed, consisting in sawing the "paper board while it is in the "wet state in which it is taken "from the paper making ma- "chine substantially as describ- "ed and for the purpose set "forth."

It will thus be seen that *the original patent is for "a machine"—and the reissued patent for "a process."* It makes no odds whether it is viewed narrowly or broadly—there is such a substantial difference, that it is apparent upon the face of the papers.

"The case comes directly within the principle held in "*James vs. Campbell supra*, that a patent for a machine can- "not be reissued for the purpose of claiming the process of "operating that class of machines—because if the claim for "the process is anything more than for the use of the par- "ticular machine patented, it is for a different invention."

Heald *vs.* Rice, 104 U. S. Reports page 753.

The Court below was bound to dismiss the appellant's bill by the fact of the manifest difference between the original patent and the reissued patent, and the plain attempt of the specifications in the reissued letters patent to claim more than that for which the original letters were issued.

Manufacturing Company *vs.* Corbin,
103 U. S. Reports page 786.

Moffit *vs.* Rogers, 106 U. S. Reports page 423.

"A patent for a process, and a patent for an implement or "a machine are very different things."

Powder Co. *vs.* Powder Works, 98 U. S. Reports page 126.
James *vs.* Campbell, 104 U. S. Reports page 377.
Wing *vs.* Anthony, 106 U. S. Reports page 142.

There is such a variety of claim and disclaim in this case, that it is difficult to state the exact position occupied by the appellant. His original letters patent are clearly for *a machine*—and his reissued letters patent are clearly for *a process*, and in what way can they be assimilated? The adjective "wet" will not bear out the forced reasoning of the appellant. The reference to the supposed condition of the material when cut, does not help his construction of the matter. The learned counsel for the appellant after diligently avoiding the blunt meaning of plain words, comes to this result:

"It is therefore submitted that, *taken as a whole*, the claim "of the reissued patent is not *really* broader than the original."

For delicacy of logical touch the foregoing proposition can scarcely be surpassed. When we examine the testimony we fine nine-tenths thereof concerning the variation in, and effect of, a cutting machine. When we consider the manner of the presentation of the question in the Court below, we discover that the bill was dismissed because the reissued patent was void, and the appellant had no foundation for his complaint. The other questions in the case were not discussed or passed upon because it was unnecessary.

There was no strained construction placed by the Court below upon the position taken there by the appellee. The record shows, and the judgment of the Court establishes, and the fact that the appellant devotes *eight* pages—out of the eleven—of his paper book, to the consideration of this vital (as well as fatal) question, confirms fully, that the bill was dismissed because the reissued patent was clearly and undoubtedly void. Specific objections were not needed. Evidence upon the subject would have been useless. The Court below was informed conclusively.

When the learned counsel for the appellant say (page 3) that this case was argued in the Court below at an unfortunate time, and lament the distressing epidemic which then seemed to affect reissued patents everywhere, they would have added strength to the paragraph and perhaps given more information to the Court, had specific instances been given.

——FINALLY.——

The Court below (Justices Butler and McKennan), filed no opinion setting forth the reasons for dismissing the appellant's bill, because they were so easily discerned. The Court below did not write out and file a legal opinion, because the law and its application were so well settled; and it is therefore submitted that—the decree of the Court below should be affirmed.

CHAS. H. PENNYPACKER.